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American Writing Paper Co. to Improve Mills

Program Calls for the Speeding Up and Lengthening of Several of the Paper Machines—Expenditures Include $30,000 for New Drives, $40,000 for Driers, $10,000 for Screens, $9,000 for Smoothing Press and $6,000 for Rag Washer for Linden Division and $30,000 for New Roofs and Equipment for Crocker Division

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., January 14, 1936—A number of plans for the renovation of of the mills of the American Writing Paper Company Inc. were made public yesterday.

It is planned to lengthen several of the paper machines and speed them up. The Crocker Division is to have $30,000 spent on new roofs and equipment. The George C. Gill Division is to be allocated $21,000 for new roofs, couch rolls and drier hoods.

The Linden Division is to have allocated to it $30,000 for new drives; $40,000 for driers; $10,000 for screens; $9,000 for a smoothing press and $6,000 for a rag washer.

The Mount Tom Division will have $40,000 allocated to it, of this $20,000 being allotted for new Jordans, $10,000 for screens and $10,000 for roofs.

The Nonotuck Division is to have $10,000 for roofs; $25,000 for a new water wheel; $4,000 for new agitators for the stuff chest and $6,000 for suction rolls.

The Planter and Porter-Parsons Division is to be allocated $12,000 for a new roof; $70,000 for new floors and beaters and $10,000 for power equipment.

The B. & H.-Wauregan Division will have $7,000 for a new roof.

H. R. Rafton Sues Castanea Paper Co.

A patent litigation suit is now in progress in the Federal District Court in Pittsburgh, Pa. This is based on the alleged infringement of certain patents of H. R. Rafton of Andover, Mass., by the Castanea Paper Company of Lock Haven and Johnsonburg, Pa., dealing with the use of carbonate fillers in paper.

Particular emphasis is apparently being placed on the following subjects:

The use of starch to suppress foaming.

The use of the minimizing effect whereby carbonate and alum are added to the stock close to the wire, as for example in the head box.

The use of a paraffin emulsion with alum and carbonate filler.

The use of wax and rosin size with calcium carbonate filler.

Among the men prominent in the paper industry who have been witnesses or technical experts are: George Spence of the New York and Pennsylvania Company; W. E. Byron Baker of the Castanea Paper Company; C. C. Heritage of the Oxford Paper Company; J. A. DeCew of Process Engineers, Inc.; W. Boyd Campbell of the Forest Products Laboratories of Canada, and W. G. MacNaughton of the Pulp and Paper Laboratory of Savannah, Ga.

Brown Co. Loan Authorized

[FROM OUR REGULAR CORRESPONDENT]

BERLIN, N. H., January 13, 1936—The City Council passed a resolution Tuesday evening, authorizing the borrowing of $250,000 through the state, which is to be used for financing the Brown Company woods operations. This amount is part of a total loan of $2,000,000 approved by the Governor and council some time ago. The loan is being made in small blocks as the funds are needed by the company.

No Truth in Bagley & Sewall Rumor

T. C. Roberts of the Beloit Iron Works, Beloit, Wis., writes: "Replying to your favor of the 7th, we are pleased to have the opportunity of putting you straight on the rumor which you heard regarding The Bagley & Sewall Company, becoming a division of the Beloit Iron Works. There is absolutely nothing to it. Unfortunately it is one of those rumors which starts for some unknown reason and spreads quite rapidly. The Bagley & Sewall Company is one of our keen competitors."

Site for Paper Mill Not Selected

Alexander Thomson, chairman of the board of the Champion Paper and Fibre Company, Hamilton, Ohio, writes as follows:

"I have your letter of the 8th, regarding the pulp mill which our company is contemplating erecting in the South and in reply must advise you that at present the site is not determined. As soon as our plans are definite, we shall be glad to advise you."

Canadian Newsprint Paper Outlook Brighter

Consumption for 1936 Expected to Equal, If Not Exceed, Output for 1935—Production for Last Year Established New All-Time Record—Advance of $1 Per Ton Represents First Increase In Quotations for Several Years.

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., January 13, 1936—Canadian newsprint production for 1935 was between five and six per cent greater than for 1934 and established a new all-time record. Demand for newsprint closed strong at the end of the year and expectations are that consumption in 1936 will equal, if not exceed, that for 1935.

The majority of Canadian manufacturers are looking for increased production, not only for shipment to the United States, but to oversees markets. The latter has developed substantially in the last two years.

The top prices for newsprint for 1936 will be $41 a ton delivered in New York or Chicago—a disappointing increase of only $1 a ton, but encouraging in that it represents the first increase for several years.

Production of pulp and paper, aside from newsprint, recorded a further advance in 1935. With the pick-up of business generally, the demand for fine papers expanded and this end of the industry experienced one of the best seasons in some years.

The demand for mechanical pulp increased, reflecting the expansion of newsprint production, while sales of bleached sulphite pulp to the artificial silk manufacturers continued at a high level.

Paper box manufacturers and other specialty operators, report somewhat better demand for their products. On the whole the outlook for the pulp and paper producers is encouraging, and production, together with values should record an increase in 1936.

Codes Discussed for Pulp Workers

With a view to preventing a possible recurrence this year of the pulpwood strike at the Head of the Lakes last Fall, the Hepburn Government it attempting at the present time to bring about some "codes" agreement, concerning these workers, under the Industrial Standards Act. Louis Fine, chief enforcement officer under the Act, has been sent to Fort William, on the instructions of the Hon. David Croll, Labor-Welfare Minister, to negotiate with the industry in question. Last Fall's strike is reported to have upset completely calculations of the Government for increased pulpwood export sale.

In the meanwhile a scale of wages to prevail in all woods operations in the Thunder Bay district during the current season has been agreed to at Port Arthur. The new scale provides an increase in the minimum rate for men working on a monthly basis. It was decided that in no case would a price of less than $35 a month with board be paid, with experienced lumbermen to receive not less than $40 a month and board when working on a monthly basis. Representatives of Lake Head paper mills were present at the negotiations.

Appleford Salesmen Hold Convention

The annual sales convention of Appleford Paper Products, Ltd., was held at the Royal Connaught Hotel in Hamilton a few days ago. George L. Clark, general sales manager, presided. Those in attendance numbered over 40 and included the entire sales force in the provinces of Ontario and Quebec, with representatives also present from one or two of the principal distributors.

W. B. Powell, president, in welcoming the sales force, stated that 1935 business showed a very satisfactory increase over that of 1934. Mr. Powell also announced that several new lines of paper products were being added to the Household Paper family, and confidently looked for a substantial increase in sales during the next twelve months. Frank Smith stated that the slogan for 1936 would be "Display is the Thing" and impressed on the sales force the great need of display if sales were to be sufficiently increased.

Development of Continental Paper Products

Less than twelve months after announcing the erection of a large new wing, to take care of their ever-expanding paper bags, Cellophane bags, paper cups and dishes business, the Continental Paper Products, Ltd., Ottawa, now find a further addition to be urgently needed.

The building of another story to the new wing is now being rushed to completion. Some idea of the greater facilities for service which the new story will provide may be gained from the following details: built of solid brick and steel at a cost of $25,000, the addition will add 180x79 feet to the already extensive and recently augmented floor area.

Plans to extend the scope of Continental Paper Products, Ltd., service to their customers, through the extra facilities afforded, are being carefully considered, to ensure that the utmost benefit shall be derived from the latest extension of their plant by the firm's customers everywhere in Canada.

Notes and Jottings

The Upper Lakes Pulp and Paper Company, Ltd., to which sales of the Great Lakes Paper Company was approved by the courts, has now received its charter from the Dominion Government and will take steps immediately to transfer the assets of the Great Lakes Company and issue the securities of the new firm. An unofficial opinion was that a few weeks would be required to complete the organization work. In the meantime, the receivers of the Great Lakes Company, the National Trust Company, will carry on and supply newsprint to the publishers who have entered into contracts with Gefaell and Aldrich.

Thomas Edward James Kelly, assistant treasurer of the E. B. Eddy Company, Ltd., died at his residence in Ottawa a few days ago following an illness contracted in December. The late Mr. Kelly was one of the two oldest employees of the Eddy company holding executive rank. He began work with the organization after going to Hull with his parents in 1880 from Lauzon, Que.

The Ontario Paper Company, Ltd., has awarded to Foster Wheeler Company, Ltd., of St. Catharines, Ont., a contract for two boilers, each having a capacity of 150,000 pounds of steam per hour at a working pressure of 450 pounds on the gauge. The contract includes furnaces, economizers, superheaters, air preheaters and all the minor accessories of a complete boiler installation. The construction of the new boiler plant at Thorold is the initial item in an important program which will be followed immediately by the installation of turbo-generator plant, 13,000 hp. capacity.

Wisconsin Paper Group Holds Annual Meeting

M. T. Ray, of Thilmany Pulp & Paper Co., Elected President to Succeed J. A. Wesley—Institute of Paper Chemistry Adds Two Genuine Specimens of Egyptian Papyrus to Its Historical Collection—Stormy Weather Delays Building Operations

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., January 13, 1936—At its annual meeting at Valley Inn, Neenah, Wis, January 4, the Wisconsin Paper Group elected M. T. Ray of the Thilmany Pulp and Paper Company, Kaukauna, Wis., as its president. He succeeds J. A. Wesley, Rhinelander, Wis. The group is made up of 27 leading mills and converting plants in Wisconsin for the shipment of pool cars to jobbers through an administrative office at 411 Garfield avenue, Menasha, Wis.

L. E. Croy, Menasha, Wis., was elected vice-president, and L. O. Schubart, Neenah, Wis., secretary-treasurer. Irwin Pearson was reappointed executive secretary.

Members of the executive board are: W. K. Austin, Neenah; W. K. Gerbrick, Menasha; T. M. Gilbert, Menasha; F. C. Heinritz, Appleton; A. F. Kletzien, Appleton; R. M. Sensenbrenner, Menasha; H. D. Wake, Wisconsin Rapids, and J. A. Wesley, retiring president.

Reclaiming By-Products

Solution of the sulphite liquor waste problem looms as a possibility through the granting of a patent entitled: "Reclaiming By-Products" to Peter A. Paulson, Appleton, Wis., formerly of the Kimberly-Clark Corporation and now a consulting engineer. The patent was issued at Washington, December 31, 1935, after being pending since September 14, 1935. Eight claims were allowed.

Mr. Paulson's patent describes a method of utilizing the values of waste sulphite liquor which comprises evaporating the liquor, heating the cooking liquor of a digester by indirect heat exchange with the steam generated in the evaporation, and generating heat for carrying out the evaporation of the waste liquor by burning the concentrated residue of the liquor. The engineer has spent several years working on the process.

Escanaba Staff Changes

Leo Doty has been promoted from pulp mill superintendent to assistant superintendent of the Escanaba Paper Company, Escanaba, Mich., according to an announcement of E. G. Bennett, general manager. R. W. Haddock is general superintendent. Other changes include the appointment of Shirley Davis as general foreman of the pulp mill, and of George Bowden to take charge of the company's laboratory. L. H. Reed, technical director, resigned effective January 1 to accept the managership of a mill at York Haven, Pa.

Water Power Tolls

Tolls of $76,386 have been levied by the Wisconsin Valley Improvement Company, Wausau, Wis., for the last six months of 1935, payable by users of water power along the Wisconsin River. They are figured on a basis of seven per cent return. A hearing was held before the Wisconsin Public Service Commission January 9, giving opportunity to file objections.

Among those assessed are the Wisconsin Public Service Corporation, Rhinelander Paper Company, Tomahawk Power and Pulp Company, Tomahawk Pulp and Paper Company, Tomahawk Kraft Paper Company, Grandfather Falls Company, Wausau Paper Mills Company, Marathon Paper Mills Company, Mosinee Paper Mills Company, Consolidated Water Power and Paper Company, Wisconsin River Paper and Pulp Company, Whiting-Plover Paper Company, Nekoosa-Edwards Paper Company, and Wisconsin Power and Light Company.

Paper Chemistry Institute

Two specimens of genuine Egyptian papyrus have been added to the historical collection of the Institute of Paper Chemistry, Appleton, Wis. They are the gift of Dr. E. J. Goodspeed, of the University of Chicago, who has a large personal collection. These specimens were found in the ancient Karanis, now Kom Ushim, Egypt, and can be dated authentically at approximately A. D. 150. Each is preserved between plate glass, and reveal the structure and grain.

Building operation on the additions to the Institute of Paper Chemistry have been delayed somewhat by stormy weather. Practically all of the concrete foundations have been completed and the forms removed, and much of the steel work for the superstructure is in place.

William Hewins, assistant secretary of the National Paper Trade Association, called on members of the New England Paper Merchants Association last week, returning to New York Friday evening.

H. F. Bergstresser, vice-president of the Wyomissing Glazed Paper Company, Reading, Pa., and P. M. Beach, sales representative of the Riegel Paper Corporation, Riegelsville and Milford, N. J., called on the trade last week.

Berry Council Meets

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., January 15, 1936—As a result of the meeting of the so-called Berry Council for Industrial Progress held here last week, seven committees were appointed to consist of seven members, taking up seven different subjects to report back to the Council at some later date, not yet determined.

On each committee there are three management members, three labor members and one representing the consumers. The seven different subjects include: national industrial policy; maximum work week, general wage and child labor; fair trade practices; competition, both internal and external, affecting American standards; government competition with private enterprise; anti-trust laws, including the Federal Trade Commission Act and their effect on industry; and financial aid to small enterprise.

Oliver M. Porter, representing the United States Pulp Producers' Association, was appointed one of the management members of the committee dealing with competition, both internal and external, affecting American standards.

Henry S. Dennison, of the Dennison Manufacturing Company, was appointed a management member of the committee on national industrial policy.

Among those attending the Council meeting, in addition to those mentioned were: F. S. Becker, executive manager of the National Paperboard Association; A. H. Chamberlain, National Paper Trade Association; Sidney Froham, president of Hinde & Dauch Paper Company; Paul S. Hanway, executive secretary of the National Fibre Can and Tube Association, and Matthew J. Burns, president of the paper makers' union.

Demand for Paper Fairly Active In Boston

Moderate Volume of Fine Paper Sales Transacted—Wrapping Paper Business Very Good, With Quotations Steady—Box Board in Light Request—Outlook for Paper Stock More Favorable—Old Rope and Bagging Firmer—Roofing Stock Higher

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., January 13, 1936—The wholesale paper market was fair for the season of the year during the last week. Sales of fine paper dealers were in moderate volume. In some quarters business in wrapping paper was very good, with prices remaining at about the same levels. The demand for box board was moderate.

Favorable conditions prevailed in the paper stock market. With the price trend upward, the trade generally was optimistic. Several grades advanced in price. There was a good business in old papers. White blank news rose to 1.30 @ 1.35 from 1.25 @ 1.30. No. 1 kraft advanced to 1.05 @ 1.15 from a flat 1.05; in some quarters, a range of 1.10 @ 1.15 was quoted. Kraft corrugated boxes went up to .85 @ .99 from a flat .85. Bagging was firm and very much sought after.

Transmission rope advanced to 1.00 @ 1.10 from .90 @ 1.00, foreign scrap burlap to 2.00 @ 2.15 from 1.95 @ 2.00, domestic scrap burlap to 1.90 @ 2.10 from 1.60 @ 1.75 and paper mill bagging to 1.35 @ 1.50 from 1.20 @ 1.35.

The demand for new domestic rags was very fair, with prices unchanged. In old domestic rags, No. 1 roofing stock rose to 1.55 @ 1.65 from 1.40 @ 1.50 and No. 2 roofing stock to 1.35 @ 1.45 from 1.25 @ 1.35. There was a good call for foreign rags, with quotations unaltered.

New England Paper Merchants Meet

With an attendance of 47, the January meeting of the New England Paper Merchants Association was held Tuesday evening at the Hotel Touraine. The meetings of the Fine Paper Division and the Wrapping Paper Division, which preceded the meeting of the association as a whole, were of unusual interest. The new National assistant secretary, William Hewins, who was present, made helpful suggestions, particularly at the meeting of the Wrapping Paper Division.

The nominating committee, Arthur Blackman, W. E. Porter, Jr., and Harrie E. Waite, appointed at the last previous meeting, presented the following names for officers, who were elected by one ballot cast by the secretary. President, Robert M. Stone; first vice-president, in charge of fine papers, Frank H. Winter, second vice-president, in charge of wrapping papers, John R. Halkyard; auditor, J. Frank Halloran. Board of directors, fine papers, W. E. Porter, Jr., and Arthur C. Biza; wrapping papers, Charles A. Shaw and Harry J. Dowd. Representatives to the National Paper Trade Association, John H. Brewer and Floyd H. Blackman. The report of the secretary-treasurer showed the organization in good financial condition.

J. Chester Crandell, of Scovell Wellington & Co., the speaker of the evening, a recognized authority on tax matters, presented the subject of "Handling Federal Tax on Payrolls under the new Social Security Act" in a highly interesting and instructive manner. He recommended awaiting further instructions from both Federal and State Commissions before purchasing or having ruled up special forms for keeping the payroll.

News of the Industry

John Carter & Co., Inc., are to distribute two new covers made by the Chemical Paper Manufacturing Company, Holyoke, Mass.—Viking, a 25 per cent rag cover, and Gala. Both will be carried in stock at the Boston warehouse of the company.

J. P. Lewis Company, Inc., of Beaver Falls, N. Y., of which Charles J. Brown, of Newton, Mass., is a New England sales representative, has issued a new exceedingly attractive sample book, bound in modern spiral binding, showing high grade card board. On the outside front cover of the book, which is being submitted to the trade by Mr. Brown, is a representation of a beaver dam, with a beaver sitting on top. For the last six months, business has been good with the Lewis Company, which has installed two new boilers and increased the running capacity. The prospect is favorable for the coming year.

In the calendar of the Tileston & Hollingsworth Company for 1936, the thirteenth issued by the concern, New England scenes, beautifully depicted, predominate. The twelve sheets were selected by judges in a competition in which 65 entries were received. The work was all done by New England artists, designers, photo-engravers and printers. Blue Text, Flemish Book, Milton Text, Dorchester Antique and Crinoline Text are among the papers used.

The current exhibit of Storrs & Bement Company contains printing from R. R. Donnelley, The Lakeside Press, Chicago, excellent reproductions with the four-color process printing on paper manufactured by Wiggins, Teape & Alex. Pirrie, Ltd., London, England, a very famous series of calendars printed by The Marchbanks Press, New York; work of The Berkeley Press, Boston, and a display of Crocker-McElwain's Certificate Bond Contest, showing the official rating and the winning arrangement.

Government Paper Bids and Awards

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., January 15, 1936—The Whitaker Paper Company has been awarded the contract for furnishing the Government Printing Office with 32,600 pounds (200,000 sheets) of 28 x 34—163, white sulphite ledger paper at 6.54 cents per pound, bids for which were received on December 23.

The Printing Office has received the following bids for 4,650 sheets of gummed paper; Mathers-Lamm Paper Company, at $10.05 per M sheets; Re. P. Andrews Paper Company, $10.25; Reese & Reese, Inc., $9.95; Virginia Paper Company, $9.60; Whitaker Paper Company, $9.60; and Walker-Goulard-Plehn Company, $9.59.

Tonawanda Boxboards Damaged by Fire

[FROM OUR REGULAR CORRESPONDENT]

TONAWANDA, N. Y., January 11, 1936—Fire of undetermined origin swept through the main warehouse of Tonawanda Boxboards Inc. last week causing a damage estimated at $50,000. Firemen fought the blaze for several hours and were handicapped by high wind.

Chicago Paper Executives Express Optimism

Increased Inquiries for Various Grades of Paper and General Interest Shown by Consumers Indicate Good Business Ahead—Outlook for Fine Papers Considered Encouraging—Demand for Kraft Wrapping Paper Brisk.

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., January 13, 1936—Underlying all of the reports concerning seasonal dullness due to inventory and other factors, is a distinct note of optimism concerning 1936 among Chicago paper executives. Evidence of good business ahead is found in the increase in inquiries and general interest shown among the buyers of paper. No let down is apparent in any of the grades, with kraft and board markets continuing to report satisfactory business and a livening up of inquiries. Fine papers are progressing satisfactorily, with bonds and ledgers expecting material betterment shortly. Not quite so much is expected of the book and cover market, but everyone seems satisfied that these markets, too, will reflect general improvement. Groundwoods are exhibiting strength. The newsprint representatives expected the let down following the surge to "get in under the wire" in December. Waste papers have shown strength during the week with no let down apparent, as mixed papers, news, shavings and other grades continue in improved demand.

Association Activities

The Midwest Division of the Salesmen's Association of the Paper Industry held its first meeting of the New Year on January 6 with a goodly attendance devoting the majority of its time to a discussion of market trends. The association is also awaiting word from New York as to plans for the Salesmen's program during the February meetings at the Waldorf Astoria. The association will again assume an important part of the job of lining up railroad routes not only for sales executives but for local paper merchant groups as well.

Box manufacturers are expected to convene in Chicago in great numbers the latter part of this month when both the Western Paper Box Manufacturers Association and the National Paper Box Manufacturers, Western Section, are to meet in this city. The Western Paper Box Manufacturers Association is scheduled to meet on January 19-22 and the National Paper Box Manufacturers Association from January 20 to 22.

News of the Industry

Well known in both paper and sports circles J. J. "Joe" Lipp is reported to be doing exceptionally well with his new course paper firm established only shortly before the holidays. Mr. Lipp, a well known sports official, resigned as director of sales of the Inlander-Steindler Paper Company, and established the new firm known as the J. J. Lipp Paper Company, 323 West Polk street. Mr. Lipp has a wide and valuable experience in the wrapping and course paper field.

One of the interesting pieces of mailing sent out from Chicago paper mill supply firms is a catalog issued by the Sullivan Machinery Company describing the Sullivan utility hoists in detail. The two color folder provides some interesting applications of the uses of the hoists and should be of real interest to paper mills.

From Alton, Ill., comes word that an interesting situation has been created with respect to the rates on imported wood pulp from the Gulf to that Illinois city. The Southern Port Foreign Freight Committee is now considering the matter. Some time ago, it is reported, the railroads from the Gulf Ports set up a rate of 22½ cents per 100 pounds on imported wood pulp from Gulf Ports to St. Louis and Alton. It is said that the wood pulp consumers at the points named are in competition with manufacturers adjacent to the Great Lakes who in addition to utilizing direct steamer facilities from the Baltic to Great Lakes ports have the advantage of a low transportation cost from the Lake Ports to their mills. To meet this situation a rate on imported wood pulp from the gulf to interior Illinois destination of 20 cents per 100 pounds, minimum weight, 80,000 pounds, has been proposed.

The paper industry should extend a vote of thanks to the American Photo-Engravers Association for the initiation of a series on "More Business Through Advertising." Going out to the business world this monthly mailing from 166 West Van Buren street, Chicago, should do a great deal in stimulating interest in quality paper that will take excellent color and black and white work. "More Business," is published under the direction of Louis Flader. Some of the topics in the first issue, superbly illustrated, are "Create Desire," "Artistry Plus," "That Business Might Be Served" and "The Potency of Color." The new publication should be most welcome and educational to the business world that is beginning to recognize the happy results of combining printing artistry and craftsmanship with quality paper.

The Illinois Senate this week rather forcefully voted down proposals to enact State unemployment compensation legislation. Members of the paper industry worried about the success of this State phase of the Social Security program are hoping that the Senate's action means the shelving of the haphazardly drawn program.

T. D. Ward Leaves Brownville Board Co.

[FROM OUR REGULAR CORRESPONDENT]

BROWNVILLE, N. Y., January 13, 1936—Announcement is made that Taylor D. Ward has resigned as sales manager of the Brownville Board Company to be succeeded by J. B. Porter, of Albany, who will take over his new duties February 1. Mr. Ward and family spent the holidays in the Middle West but his plans for the future have not been announced. He had been connected with the company since the spring of 1932. Mr. Porter has been associated with the Hudson Valley Paper Company in a similar capacity for several years and plans to move his family here in the near future.

Stevens & Thompson Makes Appointments

Emil E. Kolk, who has been connected with the Stevens & Thompson Paper Co., 205 East 42nd St., New York, for a number of years, has been appointed assistant to the Vice-President, C. Alfred Wagner.

Charles E. Donovan, who has had considerable experience in the paper industry, has been appointed sales manager of the tissue and dish division.

Frank E. Irsch, Jr., has been placed in charge of sales promotion and advertising.

Philadelphia Paper Trade Association Meets

Norbert A. Considine, of Paper House of Philadelphia, Elected by Board of Governors to Serve As President for Another Term—Stresses Necessity for Strong Organization to Maintain Benefits Accrued From Code

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., January 13, 1936—The Paper Trade Association of Philadelphia held its annual meeting at the Down Town Club, on Wednesday, January 8. The large attendance reflected a very keen interest on the part of members in the activities of the association.

After luncheon, President N. A. Considine took the chair, and as is customary, addressed the meeting and reported on the activities of the association during the past year. He particularly stressed the necessity for a strong organization in order to maintain any benefits that may have accrued from Code administration. He pointed out that in a highly competitive field there would always arise problems of personal relationships and he felt that the association could serve a useful purpose in eliminating friction, so that a standard of fair trade practices could be maintained.

Mr. Considine deemed it unnecessary to relate in detail the activities of the National Paper Trade Association as these had been fully covered by printed reports, but he drew the attention of the members to an address made by Counsel J. K. Javits, early last year in which the importance of association membership to the smaller houses had been emphasized.

Another activity touched upon by Mr. Considine was the gathering of local Sales Statistics by the Secretary, Mrs. Doris E. Lewis. Based on eleven months' figures already reported, and estimating December, the sales for 1935 approximated $8,250,000. Assuming an average gross profit of 20 per cent, this would produce a gross profit of $1,600,000 of which $500,000 would probably be absorbed by Salaries and Commissions, $400,000 by warehouse charges, and $350,000 by administration costs. Although the above figures do not cover the entire trade, they showed that the cost of association activities was infinitesimal in comparison with the benefits received.

Following the address of President Considine, brief reports were made by Ormond Freile, for the Fine Paper Division, George W. Ward for the Wrapping Division, and by LeRoy S. Bishop, treasurer. Nominations for Board of Governors were then called and the following were elected to serve during the ensuing year: Norbert A. Considine, Paper House of Pennsylvania; Ormond Freile, Paper Merchants, Inc.; T. H. B. Smythe, The J. L. N. Smythe Company; George W. Weaver, Garrett-Buchanan Company; LeRoy S. Bishop, Raymond & McNutt Company; Harry Lefkowith, S. Walter, Inc.; F. A. O'Neill, Sr., Paper Manufacturers Company, Inc.; Nathaniel Saxe, Saxe Paper Company; C. A. Wilder, Wilder Brothers Company; William S. Wilcox, Wilcox-Walter-Furlong Paper Company; William A. Hentz, the Thos. W. Price Company, and W. B. Killhour, Quaker City Paper Company.

The meeting gave consideration to a revision of the Constitution and By-Laws to conform with the uniform By-Laws suggested by the National association. The revised By-Laws as suggested by the By-Laws Committee were formally adopted. Immediately following the annual meeting the new Board of Governors met and elected the officers to serve during the coming year as follows: President, Norbert A. Considine; First Vice-President in charge of the Fine Paper Division, Ormond Freile; Second Vice-President in charge of the Wrapping Division, T. H. B. Smythe; Third Vice-President in charge of the Bag Group, Harry Lefkowith; Secretary, George W. Weaver, and Treasurer, LeRoy S. Bishop.

Paper and Cordage Association

On Friday, January 17, the Philadelphia Paper and Cordage Association will enter on another year of its activities with the following serving as officers: George K. Hooper, president; E. K. Lay, vice-president; Thomas C. Hanna, treasurer; John J. Shinners, secretary, and the Rev. Croswell McBee, chaplain. On the above date, president Hooper will announce the appointments of members for the various committees for 1936 as follows: Membership: Vincent A. Dirvin, chairman, with James Andrews, Ralph Matthias, Leonard Fitzgerald and Howard Lee; Entertainment: E. K. Lay, chairman, with T. W. Monteith, Fred I. Brower, Samuel Shyrock, J. R. Howarth and Frank T. Hufnal; Finance: James Andrews, chairman, with Thomas C. Hanna and Harry S. Platt; Publicity and Goodwill: E. L. Richards, chairman, with John S. Heverly, Harry S. Platt, J. R. Howarth and Nixon H. Richman. The Board of Directors include E. K. Lay, T. C. Hanna, John J. Shinners, Harry S. Platt, Amos M. Coath, Fred I. Brower, Vincent A. Dirvin, E. 1. Richards, James Andrews and George K. Hooper.

Over President Hooper's signature, the following message has been mailed out to all the members of the association:

"Once again we enter a new year with various feelings and premonitions as to what it will mean to us individually and collectively. All signs indicate that business will continue on the upgrade for several years to come. No matter what financial rewards are in store for us, it is important to realize that you are a member of an organization, the Philadelphia Paper and Cordage Association, Inc., that continues to justify its existence and affords a continual opportunity for you to benefit by its principles.

"Any one who took part in or attended the Christmas party, so ably planned by your former officers, must admit that our association must continue to grow and accomplish greater things in the years to come. No organization can prosper except it has the hearty cooperation of not only the officers but the members as well. It is for this reason that this appeal is sent to you with the friendly request that you do your part in increasing the membership to 100 members by December, 1936, and encourage your officers by attending as many monthly meetings throughout 1936 as possible. If you know a desirable paper or twine merchant or manufacturer of either, who does not now receive the benefits of our association, will you secure his application for membership?

"Your suggestions will be welcomed by the members of the association who are most anxious that you do your bit by having your company represented at every meeting. A yearly chart will be maintained. The monthly meetings will start promptly at 12:30 p. m. and you are at liberty to leave any time after 1:30 p. m.

"The good work being done by your association is being recognized in various parts of the country, and it is planned to coordinate with similar organizations elsewhere."

Engineering Papers to Feature TAPPI Annual Meeting

The program of the Annual Meeting of the Technical Association of the Pulp and Paper Industry, which will be held at the Waldorf-Astoria Hotel, New York, N. Y., will be of particular interest to plant engineers. Following are some of the papers that will be presented:

"The Characteristics of Power Requirements for Paper Machines," by H. W. Rogers, of the General Electric Company who is chairman of the TAPPI Power and Lighting Requirements Subcommittee. This report is based on studies covering a number of years.

The Heating and Ventilating Subcommittee will submit three important papers, thereby completing an investigation that has been reported on for a few years past. These include:

"The Rate of Drying Writing Paper," by F. W. Adams of the Massachusetts Institute of Technology.

"Drying Rates for Glassine and Greaseproof Papers," by Vincent F. Waters of the Wrenn Paper Company.

"Drying Rates for Tissue and Absorbent Papers," by A. E. Montgomery of the J. O. Ross Engineering Company.

The Chemical Processes Heat Utilization Subcommittee will have one or two papers dealing with heat recovery in alkaline recovery furnaces. Specific data will be offered by F. H. Rosencrants of the Combustion Engineering Company on the Murray-Waern furnace.

The Production and Transmission of Heat and Power Subcommittee has announced that it will present the following papers:

"Diesel Engines as Applicable to the Paper Industry," by M. J. Reed of the Diesel Engine Manufacturers Association.

"Boiler Feed Water Treatment," by E. W. Butzler of the Hall Laboratories.

"Mechanical Design of Electrical Machinery," by C. H. Koch of the General Electric Company.

The Stuff Preparation Committee will offer papers on the design and operation of the Thorsen-Hery Beater, the Cowles Refiner and the Sutherland Disc Type Refiner.

The Mechanical Pulping Committee will have a preliminary report on its comparative study of ground wood refiners.

The Laminating Committee will discuss a paper on "Combiner Problems," by W. T. Marble of the Container Corporation of America.

The Alkaline Pulping Committee will have two papers of special interest to engines.

"Alkali Recovery by Electrical Precipitation," by N. W. Sultzer and C. E. Beaver of the Research Corporation.

George Tomlinson of the Howard Smith Paper Company will discuss "The Distribution of the Digester Heat Following the Blow."

The Materials of Construction Committee will have three very comprehensive papers:

"Cast Ferrous Alloys in the Paper Industry," by F. L. LaQue of the International Nickel Company.

"Copper and the Copper Alloys," by J. T. Kemp of the American Brass Company.

"Insulation Specifications for the Paper Industry," by J. W. Hemphill of the Johns-Manville Company.

These papers are presented by experts who are contributing to the effort on the part of the Materials of Construction Committee to bring together in a brief but comprehensive manner the important data regarding the use of certain construction materials.

Of particular interest regarding a number of the aforementioned papers is the fact that they are committee projects that have been carried on for from two to three years. The so-called TAPPI Committee Projects are pulp and paper industry problems that have been considered of real importance by the Technical Association Committees. There are about seventy of these projects under consideration. It is expected that the conclusions of these studies will find their way into the TAPPI Manual of Standard Recommended Operating and Engineering Practices, Testing Methods and Specifications. To obtain material of value it is usually necessary to gather data over a long period of time and to have it analyzed by highly competent individuals such as compose the committee organization of the Technical Association. Since there is considerable advantage to be gained by such committee men, participation in TAPPI committee work by experienced engineers is of distinct value. Any mill engineer who would be interested in becoming a member of a TAPPI Committee should notify the Secretary, R. G. Macdonald, 122 East 42nd Street, New York, N. Y. Any engineer connected with the pulp and paper and allied industries will be welcome to attend the annual meeting. Several of these papers will be published in advance of the meeting in the industries' news magazines.

Thermal Expansion Characteristics of Some Nickel Cast Irons

Manufacturers of internal combustion engines or other equipment subject to wide variations in temperature have been frequently troubled by unequal thermal expansion of articulated parts. Although alloyed cast iron has not been generally recognized as possessing a range of expansivity suitable for use where thermal expansion is a factor, a bulletin entitled "Thermal Expansion Characteristics of Some Nickel Cast Irons" has just been issued by the International Nickel Company, Inc., 67 Wall street, New York, which presents results of recent research which indicate it belongs in this category. This bulletin should prove particularly useful to the designing engineer. Copies of the bulletin may be had gratis by writing the International Nickel Company at the address mentioned.

Instruction Sheet for Paper Rolls

The John Waldron Corporation of New Brunswick, N. J., will gladly mail to any converting executive a copy of a valuable instruction sheet entitled, "How A Paper Roll Should Be Run In." This card is suitable for posting in the office or plant and points out the method by which a good paper roll can provide the maximum of efficiency and service hours. The problems encountered in running a paper roll in are explained and detailed description of the step by step methods for properly running in the rolls are provided.

Obituary

George Edward Preston

ELKHART, Ind., January 10, 1936 — George Edward Preston, vice-president and general superintendent of the American Coating Mills, Inc., died recently in Baylor Hospital, Dallas, Texas.

Mr. Preston had been a resident of Elkhart since 1910, when he came here from Wabash as a foreman in the mill established in the former Indiana Buggy Company plant at the end of East Marion street by the then newly-formed American Coating Mills Company, of which C. C. Colbert was and is president.

At Wabash, Mr. Preston had been calendar foreman in the old Wabash Coating Mills, now the Container Corporation of America. Mr. Colbert, who had worked his way up to the superintendency and then to the position of manager of the United Box Board and Paper Company at Wabash, knew and appreciated the knowledge Mr. Preston had acquired in the art of papermaking, and induced him to come to the new enterprise in Elkhart.

Mr. Preston later was advanced to the position of general superintendent of the East street mill, and when the corporation decided to erect in 1921 the present mammoth plant it was Mr. Preston's mechanical and technical knowledge of the papermaking trade that guided the designing and erection of the mill.

His part in the successful venture was appreciated and he was substantially recompensed. He acquired large holdings in the company, and was chosen its vice-president, as well as continuing as its general superintendent.

Born in Ripley County, Indiana, and orphaned in early childhood, Mr. Preston spent his years till maturity on a Wabash county farm; and then, with his young bride, Florence Wamsley Preston, located in Wabash.

He has told friends of his long quest for work in the paper mill there. Every morning for six months, he said, he would rise early to be the first in the line of applicants at the mill door, but each time the foreman would wave him aside, usually because his diminutive size did not impress the foreman in comparison with the huskier appearance of other applicants.

But finally, the foreman yielded to the young man's persistence, and he was given a job. He performed his duties so well that advancement to a foremanship came in due time. And in the service that followed he acquired the technical knowledge that was to play so important a part in his Elkhart career.

Large means at his command in the last score of years have afforded Mr. and Mrs. Preston the opportunity they enjoyed of liberally supporting the church and other philanthropic organizations. He was chairman of the board of church trustees for many years until failing health caused him to resign that position, although remaining a member of the board.

He also was a member of Kane Lodge of Free and Accepted Masons, and of the Elkhart Chamber of Commerce.

Theodore E. Xistris

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., January 10, 1936—Theodore E. Xistris, aged 37, who had resided at Appleton, Wis., until October of last year, died unexpectedly January 9, at his home in Glens Falls, N. Y. The body was conveyed to Appleton for burial January 13.

Mr. Xistris was associated with the A. E. Broughton Company, makers of valves and stock controls for paper machines. The company moved last fall from Appleton to Glens Falls. Beginning in 1920, he was engineer for the Valley Iron Works Company, Appleton. He resigned in May, 1934, to join the Broughton firm.

Mr. Xistris was a member of the Riverview Country Club, Appleton, and a lieutenant in the Ordnance Reserve. He was formerly a member of TAPPI. His widow and two children survive.

Clyde A. Plaskett

Clyde A. Plaskett, a member of the Technical Association of the Pulp and Paper Industry, who has been in charge of container investigations in the Timber Mechanics Section of the Forest Products Laboratory, Madison, Wis., died December 24, 1935.

Mr. Plaskett was born February 12, 1892 in Illinois. He was graduated from Purdue University with the degree of B.S. and C.E. In 1917-1918 he was with the Burrell Engineering and Construction Company of Chicago as assistant superintendent of construction. Since 1918 he has been with the Forest Products Laboratory at Madison as assistant engineer and senior engineer.

George E. Brown

[FROM OUR REGULAR CORRESPONDENT]

BROWNSVILLE, N. Y., January 10, 1936—George E. Brown, 55 years old, for years prominently connected with paper mills in Northern New York, died here this week after a brief illness. He had planned to move to Chatham this month, to take over the management of the Columbia Box Board Mills. He has been identified with the paper industry since early youth, having served as superintendent of plants at Fulton, Lockport, Coatesville, Pa., Gordon, Ga., Chattanooga, Tenn., Toronto, Canada, and Ohio. At one time he was also manager of the old Leray Paper Mill, at Carthage, now operated by Carthage Papermakers. His widow is the principal survivor.

Simplified Practice, Asbestos Paper and Asbestos Millboard, Reaffirmed

The Division of Simplified Practice of the National Bureau of Standards has announced that Simplified Practice Recommendation R19-28, Asbestos Paper and Asbestos Millboard, has again been reaffirmed, without change, by the standing committee of the industry.

This recommendation, which establishes a schedule of sizes, weights, widths and thicknesses of asbestos paper and asbestos millboard, was originally promulgated in 1924 and revised in 1926 and 1928. The recommendation as revised in 1928 was reaffirmed in 1932 and the current reaffirmation continues the form and content of the 1928 revision.

Copies of the recommendation may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., for five cents each.

Container Acquires Sefton Company

CHICAGO, Ill., January 13, 1936—The name of Sefton National Fibre Can Company is changed to Sefton Fibre Can Company, effective January 1, 1936. Container Corporation of America has acquired controlling interest in the above mentioned newly-reorganized company.

A. J. Baumgardt, for many years comptroller of the Container Corporation, will be president, and Arthur H. Grace will continue as vice-president of the can company. Both sales and operations will continue to be handled from the main office of the Sefton Fibre Can Company at St. Louis.

M. W. Wilson Discusses Newsprint

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., January 13, 1936—Morris W. Wilson, president of the Royal Bank of Canada, in addressing shareholders at the annual meeting of that bank, referred to the newsprint industry as one of the adverse factors in the industrial and economic situation in Canada. He said:

"The situation in newsprint, our greatest manufacturing industry, continues unsatisfactory. Most mills are operating unprofitably. While a price increase of $1.00 per ton has been announced for 1936, costs are higher. Were it not for the fact that production is currently higher than at any time since 1929—in fact it is establishing an all-time record—the situation would be thoroughly discouraging. With a continuation of the increased demand from the United States we can only hope that contracts for 1937 can be placed on more favorable terms; failing this, I fear that public opinion in Canada will force governmental intervention in the national interest. With some measure of cooperation on the part of newsprint buyers, this might be prevented."

Plans for Paper Week

The 59th Annual Meeting of the American Paper and Pulp Association and allied organizations will be held at The Waldorf-Astoria, New York, February 17-21.

The American Paper and Pulp Association will not hold a banquet nor a luncheon this year. There will be, however, an Open Meeting at 2:30 p. m. on Monday, February 17, at which important aspects of the association's work will be presented for discussion and for the determination of policy, particularly in respect to the industry's position on pending legislation.

During the week there will be two general luncheons at which prominent speakers will discuss current subjects. The Salesmen's Association Luncheon will be held on Tuesday, February 18, and the Technical Association Luncheon will be held on Thursday, February 20.

Harold B. Evans Goes with Dexter Co.

WATERTOWN, N. J., January 10, 1936—Harold B. Evans has resigned as city purchasing agent in order to take an executive position at the Dexter mill of the Dexter Sulphite, Pulp and Paper Company. His resignation takes effect late this month when he plans to take over his new duties as assistant to H. A. Long, vice president and secretary of the Dexter concern. A movement is now under way to honor him with a testimonial dinner by city officials before he leaves to assume his new duties.

AAA Must Give Up $200,000,000 Taxes

WASHINGTON, D. C., January 13, 1936—The United States Supreme Court today by a unanimous decision ordered $200,000,000 of AAA impounded taxes returned to processors and left in doubt the status of $1,000,000,000 other farm taxes already levied on processors.

Weyerhaeuser Opens New York Office

L. K. Larson is in charge of the New York office of the Pulp Division Weyerhaeuser Timber Company which has just been opened at 230 Park avenue. The new Weyerhaeuser sulphite mill at Everett, Wash., is rapidly being completed and will be in operation very shortly.

Gummed Products Co. Changes

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, January 13, 1936—An important change was made in the organization of the Gummed Products Company, of Troy, Ohio, at the annual meeting of the concern Thursday when Edward F. Herrlinger, Cincinnati, retired as president of the concern and was succeeded by his son, Roth F. Herrlinger, of Troy, who has been serving as vice-president.

The senior Herrlinger remains on the board of directors and was named to a newly created position, chairman of the board. It is his plan, however, to retire from active management of the company.

With the elevation of Roth F. Herrlinger to the presidency of the company, his brother, Paul Herrlinger, was promoted from secretary to the vice-presidency. G. C. Thornburg then was named secretary and Fred L. Holt of Troy, was re-elected as treasurer.

The membership of the board of directors remains the same as for last year—the three Herrlingers, Mrs. Edward F. Herrlinger and Holt.

Retirement of the elder Herrlinger ends an active career in the gummed paper business over a long period of years. With Holt and the late Samuel Leech, he organized the Gummed Products Company in 1914. Mr. Herrlinger was elected president at that time and had held the position for more than 20 years.

Reports of the business for the last year made at the stockholders' meeting, depicted a profitable year and the outlook for the coming year is declared excellent.

The company has moved into its new plant, the largest gummed paper plant in the United States. Work has just started on the installation of a new electrical gumming machine.

Friday and Saturday the annual sales convention of the company was held. The salesmen were shown through the new $300,000 plant.

Potdevin Completes Busiest Year

Potdevin Machine Company, of Brooklyn, N. Y., reports the year just finished as the busiest and most productful in the company's history. To cope with the increased volume of orders, the manufacturing space was enlarged some 30 per cent, with corresponding increases for the Engineering and Sales Departments.

The record shipments made reflect the development of paper bag and other paper converting facilities by Potdevin clients as well as the installation of new plants, both domestic and foreign. Many of the shipments were of newly developed Potdevin models in all lines—varnishing and coating machinery; multi-color, multi-size unroll-and-rewind presses, some for oil-and-pigment inks, others for staining or decorating in quick-drying aniline inks.

The company faces 19[illegible] with large unfilled orders in all departments and with the largest force it has ever had on its payroll.

The old lines of Potdevin waxing machines and Potdevin bag machines are selling well.

Superintendents To Have Ladies' Night

KALAMAZOO, Mich., January 13, 1936—The Michigan Division of the American Pulp and Paper Mill Superintendents Association will hold their ladies' night meeting Saturday, January 25 at 6:30 o'clock at the Park American Hotel. There will be a banquet, a program of entertainment, followed by dancing.

CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

Battle Creek, Mich.—The Michigan Carton Company, manufacturer of paper board specialties, chip board, news stocks, etc., has closed bids on general contract for new addition to plant and will place award at early date. New unit will be one-story, equipped in part for general production with remainder given over to storage and distribution. Cost reported over $50,000, including equipment. Shreve, Anderson & Walker, Book Building, Detroit, Mich., are architects.

St. Louis, Mo.—The Cupples-Hesse Envelope Company, 4173 North Kingshighway, manufacturer of commercial envelopes and kindred paper products, is having plans drawn by Koerner Engineering Company, Syndicate Trust Building, St. Louis, engineer, for proposed new addition to plant, recently referred to in these columns. It will be two-story, adjoining present factory, approximating about 50,000 square feet of floor space, covering an area 134 x 180 feet. New unit will be used for manufacture of paper cups and allied specialties. Project will include alterations in present plant and is estimated to cost about $70,000, with equipment. Bids will be asked on general contract at early date. Eugene Harms is president.

Tonawanda, N. Y.—Tonawanda Boxboards, Inc., Clay and Tonawanda streets, is considering early rebuilding of portion of mill, used for storage and distribution, recently damaged by fire. Loss is reported over $40,000, including equipment.

Savannah, Ga.—The Union Bag and Paper Corporation, Woolworth Building, New York, N. Y., has arranged for the purchase of additional land in the vicinity of Savannah, site of new pulp and paper and bag mill, now in course of construction. Property is located in Effingham County, vicinity of Meldrim, Ga., about 18 miles from Savannah, and will be used, it is said, in connection with raw material operations; tract totals about 2000 acres and will be given over to Georgia slash pine development. Company has active construction in progress on new mill units, noted, at Hermitage Plantation, Savannah, and expects to have initial plant units ready for operation in the Spring. Mill will have a rating of 120 tons per day. It is estimated to cost close to $4,000,000, with machinery and equipment. George F. Hardy, 309 Broadway, New York, is engineer for new plant.

Chelsea, Mich.—The Sterling Fibre Company, Waltham, Mass., has concluded arrangements for the purchase of one of buildings at former plant of the Lewis Spring and Axle Company, Jackson, and will take over property at once. Acquisition was made from R. H. Rossman, receiver for the Union and Peoples National Bank, Jackson, Mich., holder of the property, and has been approved by the Circuit Court. Structure is one-story, L-shaped and will be remodeled and improved for new plant. It is understood that the company proposes early removal of plant at Waltham to new location, with installation of additional equipment for large increase in present capacity. It is proposed to give employment to about 125 operatives at new location.

Dayton, Ohio—The Aetna Paper Company, manufacturer of bond and other writing papers, has awarded a number of contracts for extensions and improvements in power plant at mill, previously referred to in these columns, and will proceed with steel frame superstructure for addition to station at early date. New equipment will be installed, for which various contracts have been let. Project will cost upwards of $75,000. W. I. Barrows, Reibold Building, Dayton, is consulting engineer.

Watervliet, N. Y.—The Behr-Manning Corporation, Troy, N. Y., manufacturer of abrasive papers and kindred abrasive materials, has superstructure under way for new mill addition at Tenth avenue and Twenty-seventh street, Watervliet, to be three-story, 50 x 200 feet, and 50 x 100 feet, as recently noted in these columns. Contracts for interior work are being let. It is proposed to have new unit ready for service at earliest date. It will cost about $125,000, with equipment. The Morton C. Tuttle Company, 31 St. James avenue, Boston, Mass., is general contractor.

Menasha, Wis.—The Marathon Paper Mills Company is planning a by-products plant development at mill, providing for the utilization of waste sulphite material for certain chemical production. Facilities will be provided at once for new output, to include a commercial fuel from the waste, as well as the reclaiming of various wood ingredients. Commercial pulp manufacture will proceed as heretofore at the mill.

Thorold, Ont.—The Ontario Paper Company is arranging immediate call for bids for electrical equipment for new steam-operated power plant at local mill, recently referred to in these columns, to include turbo-generator units and complete auxiliary equipment. The building will be erected by company forces. New station is estimated to cost close to $1,000,000, including equipment.

London, England—Courtauld's, Ltd., manufacturer of cellulose rayon products, is pushing construction of new fiber mill and initial units of plant are expected to be ready for service in thirty to sixty days. This will be followed by other additions, now in progress. Entire plant will be equipped for large output and is estimated to cost in excess of $1,500,000, with machinery. Company is considering early construction of a new rayon mill in vicinity of Plymouth, England, comprising several large units, with power house, pumping station and other mechanical divisions. It is estimated to cost in excess of $1,000,000, including equipment. Company engineering department will be in charge.

Kisshu, Korea—The Northern Korean Paper Manufacturing Company, Ltd., recently organized as an interest of the Oji Paper Mill Company, Shingishu, Korea, with

Cut DIRT COUNT

50%

What would it be worth to you to make your paper *twice as clean* as it is now? A good many mills have done just that simply by putting in more or bigger Bird Screens having the additional capacity to permit the use of finer cut screen plates. Maybe you can do it, too. If so, it's a mighty inexpensive way of making better, more salable paper. May we talk it over with you?

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capital of 20,000,000 yen (about $5,800,000), has approved plans for new paper and pulp mill at Kisshu, Kankyo-Hokudo, Korea, to utilize timberland in Northern part of Korea for pulpwood service. New plant will comprise several large units, with power house and other mechanical divisions. It is estimated to cost over $1,000,000, with equipment. It is understood that new mill will follow output of parent organization, comprising sulphite pulp and wrapping papers, and allied products.

Plauen, Germany—Sachsische Spinnfaster, A-G., Chemnitz, Germany, manufacturer of cellulose rayon products, etc., has selected property at Plauen as site for new fiber mill, and will proceed with erection at early date. Plant will consist of a number of one-story units, to be equipped for an initial capacity of 10 tons per day, later to be increased to twice that amount. It is expected to install equipment and facilities for employment of about 400 operatives. New mill is scheduled for completion next fall and will represent an investment of more than $650,000, with machinery.

New Companies

Malden, Mass.—The Boston Paper Box and Printing Company, 200 Commercial street, has filed notice of organization, to manufacture paper boxes and containers of various kinds. Roscoe W. Buzzell, 281 Shore drive, Lynn, Mass., heads new organization.

Madison, Wis.—The Dizon Paper and Supply Company has been organized to deal in paper goods of various kinds. New company is headed by Philip and Stanley Dizon, both Madison.

Cleveland, Ohio—The Glenville Paper Company has been incorporated with capital of 250 shares of stock, no par value, to manufacture and deal in paper products of various kinds. Incorporators include Joseph Sieger and Daniel Kalovsky. E. G. Golton, Standard Building, Cleveland, is representative.

Indianapolis Paper Demand Expands

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., January 13, 1936—A steady, though slow, expansion in the entire paper field is the chief feature of the past week locally. Prices in all lines are well held. The fine paper field appears to have a brighter outlook than it has had in some time, since, in fact, the early Christmas buying. Printers report a good volume of business and books and covers are moving nicely.

Manufacturers and jobbers say contracts this year are coming a trifle easier than has been the rule. Most of the contracts are for comparatively short periods as compared to the pre-depression era. Many consumers believe there will be a price recession, but there is nothing visible now among manufacturers and jobbers that would indicate this. The AAA decision has had no effect on local paper conditions as yet. Some jobbers of newsprint seem to feel that eventually farm conditions may result in less advertising in the smaller communities. It will be some time, however, before any tendency toward this is apparent, if ever. The general feeling among the paper trade here was one of jubilation over the decision, merely as a matter of business principle.

Local box manufacturers claim a steady demand. Production in some of the plants has been speeded up largely because of sadly depleted warehouse stocks. All warehouse stocks are low, but some manufacturers are content to keep them in this condition until after the tax assessment period of March 1. Demand from automobile accessory factories, the textiles and hardware companies for boxes continues good and the outlook for further business is very bright.

The bag and common paper demand is good. It has held steady since inventory period the first of the year. Demand from cement factories, fertilizer plants, feed and flour mills continues unabated. Makers of shopping bags also report an increase.

Paper stock men here say there has been little change in demand. The mills are buying some stock and the demand appears to have widened a trifle, both fine paper and cuttings and the poorer grades of paper and rags being now in demand.

I. P. Makes Improvements at Fort Edward

FORT EDWARD, N. Y., January 11, 1936—Extensive improvements are under way at the local branch of the International Paper Company which will require several months for completion. In making known plans for installation of new equipment and replacement of obsolete parts on various machines the management announced prospects for 1936 were the brightest in several years and that sufficient orders were already booked which would guarantee capacity operations for some time. Six large machines are operated in the manufacture of specialty papers, including book and bond papers, while a seventh machine produces wrapping paper. Machine No. 5 has already undergone repairs to improve the quality of the finished product. It was stated that the machines have been operated at top speed in the past but the present aim is to concentrate on quality production rather than quantity.

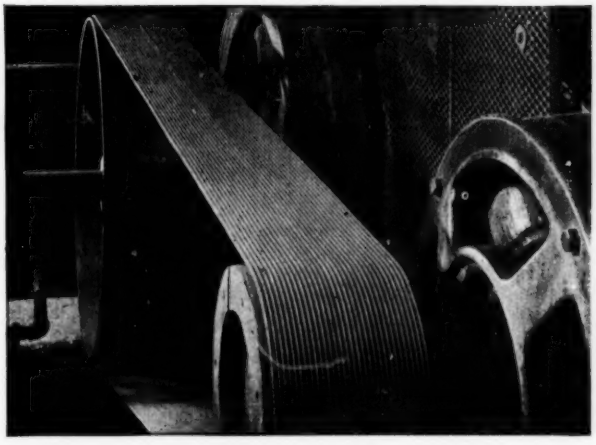
Plans call for cessation of work on No. 6 machine late this week and repairs will be launched immediately. Machine No. 4 has already been improved with new driers and production is to be confined to glazed paper, a new product never turned out here previously. Other machines will be repaired and rebuilt at various intervals during the year when the company has the opportunity to halt activities. Because of the demand for the products it has been decided that only one machine can be shut down at a time. In the department producing wrapping paper it is planned to expend about $50,000 in improvements to Machine No. 7, the increasing demand necessitating expansion.

An official said that the resumption of the forty-hour-week will serve to distribute wages amongst a larger number of employees and that more good is being done by resuming the NRA code hours than in working employees on a longer schedule. Indications are that the present capacity schedules will be observed for some time as business is exceptionally good despite a seasonal decline just now when inventories are being taken in the printing trades.

Industrial Lubrication

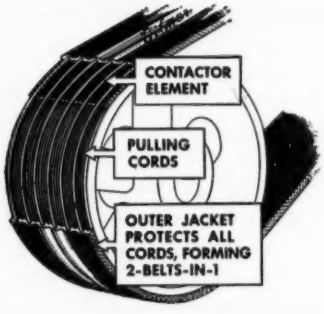
The Industrial Lubrication Reference Manual has just been published by Alemite. This entirely new and unusual book contains a store of vital information needed for modern industry for efficient lubrication maintenance of machinery. Lubricant recommendations for all types of industrial plants are given, classified according to type of machinery and according to types of gears and bearings. The editorial content includes such articles as "Common Causes of Bearing Failures," "Lubrication of Anti-Friction Bearings," "Grooving of Bearings," "Gears and Their Lubrication," etc. The Manual is illustrated with photographs and diagrams. All Alemite industrial lubricants are fully described. A copy will be sent gratis by Alemite, 1878 Diversey Parkway, Chicago.

KABLE KORD BEATS EXPENSIVE BELTING IN SCIENTIFIC TESTS



Under exhaustive tests in a large industrial laboratory, Kable Kord Endless Belts out-performed high grade belting of other material that sells at double the price. No point in mentioning names . . . for after all, the results of the test are being borne out under daily operation in scores of plants where Kable Kord is demonstrating its greater efficiency and economy.

TWO-BELTS IN-ONE



Gilmer BELTS

This 26′ x 10″ endless Kable Kord carried a continuous overload 24 hours a day for 40 months on a 60 KVA-DC generator in the Janney Cylinder Co. plant, Philadelphia. Having been taken up only 1 inch, it was still going strong when the machinery was changed this last September. This Kable Kord supplanted another belt that had cost $114.91 and lasted only 24 months. The Kable Kord cost $40.33!

PROVE IT FOR YOURSELF . . . Try a Kable Kord Belt . . . endless or in roll . . . on any convenient flat drive in your plant. Give it a chance to convince you of its superior performance, its durability and freedom from need of attention. Write today for a free copy of the Kable Kord Data Book.

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COMING EVENTS IN THE PAPER INDUSTRY

AMERICAN PAPER AND PULP ASSOCIATION, Fifty-Eighth Annual Convention and Meeting, Waldorf-Astoria Hotel, New York, February 17-21.

TECHNICAL ASSOCIATION OF THE PULP AND PAPER INDUSTRY, Convention, Waldorf-Astoria Hotel, New York, February 17-20. Annual Luncheon, Waldorf-Astoria Hotel, Thursday, February 20.

SALESMEN'S ASSOCIATION OF THE PAPER INDUSTRY, Annual Meeting and Luncheon, Waldorf-Astoria Hotel, New York, Tuesday, February 18.

NEW YORK ASSOCIATION OF DEALERS IN PAPER MILL SUPPLIES, Annual Banquet, Hotel Commodore, New York, February 19.

NATIONAL PAPER TRADE ASSOCIATION OF THE UNITED STATES, Convention, Waldorf-Astoria, New York, February 17-21.

CANADIAN PULP AND PAPER ASSOCIATION AND SECTIONS, Annual Meeting, Montreal, January 29-31.

TECHNICAL SECTION, CANADIAN PULP AND PAPER ASSOCIATION, Annual Meeting, Montreal, January 29-31.

INDUSTRIAL ADVANCE STRONG DURING FOURTH QUARTER OF 1935

As heavy industries joined forces with consuming goods, the upward movement which marked the third quarter was extended during the final three months of 1935. With abrupt rises recorded for some divisions, the faster rate of activity broadened to nearly all industries in its inclusiveness. The statistical evidences of industrial recovery at the close of 1935 were far more numerous and of more impressive proportions than those obtaining at the end of any recent year. Even during December, curtailments for inventory and holiday observance were held to the minimum, according to the "Survey of Industry — Fourth Quarter, 1935," which has just been compiled by the Research and Statistical Division of Dun & Bradstreet, Inc.

While practically all of the accepted measures of activity showed steady advances for the period, with the production and sales of a number of key industries reaching levels above any attained in the past five years, the survey points out that this heavy preponderance of favorable industrial developments does not necessarily imply an indefinite continuance of the recovery movement. It does serve, however, as a strong stimulus to business confidence. A significant fact in relation to appraisals of the immediate industrial trend is that, in general, industrial recovery during 1935 was gradual and well sustained, and that it was noticeably without the sudden spurts which so frequently bring sharp reactions.

With an average for the four weeks of December of 85.6, the Dun & Bradstreet Business Activity Barometer registered 85.3 for the week ended January 1, 1936. This was the highest level reached since November, 1930, and brought the average level of activity for the fourth quarter 25.8 per cent above that of the last quarter of 1934. The substantial rise was contributed by the four principal components: Steel production, freight-car loadings, electric output, and bank clearings. Electric output during the period established an all-time high, surpassing the peak that had held since December, 1929.

Bank clearings for the fourth quarter totalled $70,373,100,000, or an increase of 33.0 per cent over the $58,926,752,000 recorded for the comparative three months of 1934. The 1935 bank clearings total of $273,051,722,000 was the largest in four years. With failures in the fourth quarter smaller than those in the two preceding ones, the total defaults were reduced to 11,879. This represented a decrease of 24.9 per cent from the 1934 figures and was the smallest number set down for any year since 1920.

All of the seven primary factors discussed in this survey achieved a more favorable position than was occupied in the fourth quarter of 1934. The number of commercial failures in the fourth quarter of 1935 was fewer by 0.4 per cent than in the fourth quarter of 1934, while commodity prices rose 7.9 per cent, industrial pay rolls increased 20.0 per cent, and industrial employment 6.0 per cent. Industrial sales were higher by 19.0 per cent than for the fourth quarter of 1934, industrial activity advanced 25.8 per cent, and bank clearings were larger by 33.0 per cent.

FOREIGN PAPER TRADE AT HIGH LEVEL

The November exports of paper and paper products from the United States were approximately on a level with the preceding month. Some notable increases were recorded in the volume of shipments of uncoated book papers, boxboards and other boards, overissue newspapers, and paper bags. Other items show little or no increase over October, and a number show a reduction in volume, according to the Forest Products Division of the Department of Commerce.

Compared with the corresponding month in 1934, the November shipments show an increase in value of 7 per cent. This rise has been more or less characteristic of the trend in paper exports throughout 1935. Subject to the usual seasonal fluctuations, shipments of paper have shown a substantial increase from the first of the year. Only during two months—August and September—was there a drop in the value of such exports, compared with the corresponding months in 1934, and these declines were more than offset by the rise in the October, 1935, shipments to $1,912,715, an increase of 23 per cent over October, 1934. November shipments show a further rise to $1,936,663, bringing the total for the 11 months' period up to $18,856,565, compared with $17,357,479 during the first 11 months of 1934.

The increase in exports of paper base stocks, which are

of increasing importance in our export trade, was proportionately larger than for paper and board. Shipments for the 11 months' period reached a total value of $8,581,183 as against $7,242,699 during the corresponding period in 1934. Shipments of 127,664 tons of sulphite pulp accounted for $7,176,141 of this amount.

Conditions in the import trade closely paralleled those in exports. Imports of paper and paper products during November were only slightly in excess of the preceding month, but were 20 per cent higher than in the corresponding month in 1934. Imports of newsprint paper, which account for $8,109,299 out of a total importation of $9,129,957, show a rise of 5 per cent in volume (and value) compared with October, but were 15 per cent higher than during November, 1934. Imports of the remaining paper and board products, with a valuation of $1,020,658, were 16 per cent above the corresponding month in 1934, but show a decline of 18 per cent compared with October.

Imports in this class for the 11 months ended November 30, 1935, reached a total of $84,034,368, as against $78,210,814 during the corresponding period in 1934. Imports of newsprint paper, which accounts for roughtly 85 to 90 per cent of this trade, have shown a more or less steady increase from month to month, the total for the 11 months' period amounting to 2,133,440 short tons, an increase of 146,639 tons, or 7 per cent, compared with 1934. Imports of other classes of paper and board, with an aggregate valuation of $10,233,492, show a corresponding increase in value.

Receipts of paper base stocks during November dropped off 18 per cent as compared with the preceding month. At the same time, they show an aggregate increase of 17 per cent in value, compared with the corresponding month in 1934.

Imports in this line for the 11 months' period reached a total valuation of $72,665,250, representing an increase of 11 per cent over the corresponding period in 1934. This increase in the value of the aggregate receipts reflects partly an actual rise in the volume of such receipts, and partly the fact that increases occurred in the higher priced products. Thus in importations of wood pulp, increases occurred in such items as bleached sulphite, bleached and unbleached sulphate, and soda pulp, while imports of ground wood and unbleached sulphite declined. The aggregate wood pulp receipts show a rise of 2 per cent in volume but 12 per cent in value. Similarly, imports of waste material for paper making are 52 per cent higher in volume but 55 per cent higher in value.

Imports for the 11 months' period comprised 974,465 cords of pulpwood, valued at $7,342,449; 121,924 tons of rags, old paper, and other stock, valued at $3,043,889, and 1,690,415 tons of wood pulp valued at $62,278,912.

Production Ratio Report

(The statistics are based upon paper production reports to the American Paper and Pulp Association.)

COMPARATIVE MONTHLY SUMMARIES

1935	Total Production Ratio	1934	Total Production Ratio
January	65.8%	January	.....
February	70.0%	February	.....
March	70.5%	March	.....
April	70.0%	April	...
May	69.4%	May	.....
June	72.3%	June	.....
July (b)	67.8%	July	.....
August	70.9%	August	.....
September (c)	75.0%	September (c)	59.4%
October	75.6%	October	64.7%
November	75.3%	November	61.7%
December	.....	December (a)	62.1%

COMPARATIVE MONTHLY SUMMARIES

Current Weeks		Corresponding Weeks	
*December 7, 1935	76.1%	December 8, 1934	61.2%
*December 14, 1935	76.3%	December 15, 1934	65.4%
*December 21, 1935	78.7%	December 22, 1934	65.8%
*December 28, 1935 (a)	64.2%	December 29, 1934 (a)	54.8%
*January 4, 1936	67.9%	January 5, 1935	60.2%

The following statistics show the number of mills reporting by ratio groups:

NUMBER OF MILLS REPORTING, CURRENT WEEKS

Ratio Limit	Dec. 7 1935	Dec. 14 1935	Dec. 21 1935	Dec. 28 1935	Jan. 4 1936
0% to 50%	90	86	74	140	107
51% to 100%	250	252	264	189	127
Total Mills Reporting	340	338	338	329	234

*Subject to revision until all reports are received.
These data exclude (a)—Christmas Day, (b)—Fourth of July, (c)—Labor Day.

PAPERBOARD OPERATING RATIOS

According to reports from the National Paperboard Association, per centages of operation, based on "Inch-Hours," were as follows:

1934		1935		1935		1935	
September	62%	January	61%	May	61%	September	59%
October	63%	February	67%	June	65%	October	76%
November	56%	March	67%	July	59%	November	70%
December (a)	53%	April	61%	August	65%		

Week ending December 7, 1935..67% Week ending December 21, 1935..70%
Week ending December 14, 1935..66% Week ending December 28, 1935..37%
Week ending January 4, 1936....51%

St. Regis Holds Annual Meeting

Stockholders of the St. Regis Paper Company at the annual meeting at Watertown, N. Y., January 8 acted favorably on the proposal to lower the par value of the common stock from $10 to $5 a share and thereby reduce the common capital stock by $20,625,000.

The company now has authorized capital stock of $47,500,000, consisting of 100,000 shares of preferred, par $100 each, of which 44,283 shares are outstanding, and 7,500,000 shares of common stock, par $5 each, of which 4,125,000 shares are outstanding.

The plan provides also for reductions to nominal amounts of certain intangible assets such as patents and good will, on the books of the company and subsidiaries.

A proposal to reduce the number of directors from eighteen to ten was also approved, this change conforming to the actual number of directors who have been serving on the board.

The following were elected directors for the ensuing year: Jonathan Bulkley, Floyd L. Carlisle, W. K. Dick, Roy K. Ferguson, H. Edmund Machold, R. B. Maltby, Carl B. Martin, C. R. McMillen, Charles E. Norris and B. B. Taggart.

Roy K. Ferguson, president, told stockholders that the company made definite progress in 1935, but that the improvement was not sufficient to enable the company to report a profit after deducting all charges, including depreciation.

"Sales of heavy-duty paper bags increased substantially in 1935 over 1934 and a better condition in the building industry gives an improved outlook to the sales prospects in the bag division for cement, lime, plaster and other rock products," he said.

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Section of the
Technical Association of the Pulp and Paper Industry
Edited by Ronald G. Macdonald, Secretary

Waste Liquors and Gases of the Paper Industry

A Survey of Recent Domestic and Foreign Patent Literature on the Utilization of Waste Liquors and Waste Gases of the Pulp Industry, 1931-1935

(Third Compilation.)

Clarence J. West, Chairman, Committee on Abstracts and Bibliography, TAPPI

(Concluded from the issue of January 9, 1936)

Norwegian Patents (continued)

1303. 53,417. OCT. 14, 1932. I. G. FARBENINDUSTRIE A.-G., FRANKFURT A. M. PROCESS FOR THE RECOVERY OF HIGH MOLECULAR FATTY ACIDS FROM PINE OIL.

The acids contained in pine oil are practically completely esterified with the bi- or multi-valent alcohols, and the esterified product is subjected to a splitting off by the Twitchell or the autoclave process whereby only the fatty acid ester is split off. The fatty acid is separated from the resin acid esters and alcohols in the usual manner.

53,852. APRIL 21, 1928. *See* Swedish Patent 77,894.

53,969. JULY 4, 1932. *See* Swedish Patent 80,822.

1304. 54,062. JUNE 18, 1934. AKTIESELSKABET SULFITPATENTER. REGENERATION OF SULPHITE LIQUOR.

Waste sulphite liquor is evaporated and the residue burned to remove organic matter. Sulphites and thiosulphates are removed from the residue, which is then dissolved in water. The solution is treated with sulphur dioxide and finely divided calcium carbonate or other calcium compounds capable of forming bisulphite with the sulphur dioxide until the alkali salts present in the solution are converted into bisulphites. The solution, which now contains chiefly alkali and calcium bisulphites, together with calcium sulphate, after addition of sulphur dioxide is discontinued, is treated further with finely divided calcium carbonate, calcium oxide, or calcium hydroxide until the calcium bisulphite is converted into insoluble calcium sulphite and such a great part of the alkali bisulphites into the corresponding monosulphites that also the calcium sulphate is converted into calcium sulphite, after which the precipitate of calcium sulphite is separated from the solution.

1305. 54,802. MARCH 20, 1933. G. H. TOMLINSON. METHOD FOR RECOVERY OF CHEMICALS FROM PULP WASTE LIQUORS.

A method of evaporating the waste liquor without essential change in the properties of the organic constituents.

Finnish Patents

1306. 12,871. MAY 4, 1928. BJORN STRANDELL. PROCESS FOR THE MANUFACTURE OF PUTTY.

In place of linseed oil, the waste oil from the manufacture of sulphate pulp, the so-called floating rosin, is used with a large or small amount of vegetable or animal oils.

1307. 12,923. APRIL 23, 1928. G. HAGLUND. PROCESS FOR THE MANUFACTURE OF PULP, UTILIZATION OF THE SUBSTANCES DISSOLVED IN THE WASTE LIQUOR AND THE RECOVERY OF CHEMICALS.

After the waste cooking liquor is thickened to the desired degree, the organic materials present are decomposed and precipitated out in an easily separated form and washed, while the volatile acids (acetic, formic) and released sulphur dioxide gas or hydrogen sulphide (according to the source of the cooking liquor) is absorbed.

1308. 12,994. SEPT. 26, 1928. ERNEST EIGERUS. PROCESS FOR THE MANUFACTURE OF BLEACHED GROUND WOOD SUITABLE FOR PRODUCTION OF NEWS PRINT FREE FROM CHEMICAL PULP.

A ground wood is used which is treated with the waste liquor from the sulphite mill whereby the pressure necessary for the penetration of the liquor is supplied by a pump.

13,213. FEB. 14, 1929. *See* Swedish Patent 69,044.

13,586. FEB. 6, 1929. *See* German Patent 527,128.

1309. 13,587. AUG. 31, 1929. OSKARI ROUTALA. PROCESS FOR CHANGING SULPHITE WASTE LIQUORS INTO SODIUM COMPOUNDS.

Sulphite waste liquor partially or completely freed from calcium oxide by means of sodium sulphate, is filtered or centrifuged and after evaporation and combustion in a reducing atmosphere, as well as causticizing, is used in sulphate cooking.

14,199. JUNE 26, 1929. *See* British Patent 317,040.

14.233. JUNE 26, 1930. *See* German Patent 541,256.

1310. 14,235. AUG. 21, 1930. LEIF GLÖERSEN. UNION BETWEEN A SMELT OVEN AND THE ROTATING SODA OVEN.

14,236. DEC. 23, 1929. *See* United States Patent 1,779,536.

14,258. NOV. 11, 1929. *See* Norwegian Patent 48,720.

14,311. DEC. 27, 1929. *See* German Patent 549,783.

14,341. FEB. 6, 1929. *See* Norwegian Patent 47,181.

1311. 14,454. SEPT. 16, 1930. CHARLES L. WAGNER.

METHOD AND APPARATUS FOR RECOVERY OF CHEMICALS AND HEAT FROM WASTE LIQUORS.

The non-volatile and non-combustible residue from the evaporation of waste liquor is heated in a reducing atmosphere.

14,503. OCT. 21, 1930. *See* Swedish Patent 72,229.

14,506. APRIL 21, 1928. *See* Swedish Patent 73,406.

14,550. JUNE 3, 1930. *See* United States Patents 1,779,335-1,779,337.

14,551. OCT. 18, 1930. *See* Swedish Patent 79,974.

1312. 14,776. FEB. 3, 1931. INDUSTRIKEMISKA A. BOL., STOCKHOLM. PROCESS FOR UTILIZING THE HEAT OF THE RELIEF GASES FROM A SULPHITE PULP DIGESTER AND AT THE SAME TIME RECOVER THE SULPHUR DIOXIDE.

The heat of condensation or a part of it is used for the evaporation of the water from the solution and air or other gases are brought in contact with the solution, preferably counter current.

14,988. AUG. 5, 1931. *See* Austrian Patent 129,792.

1313. 15,016. FEB. 20, 1931. INDUSTRIKEMISKA A. BOL., STOCKHOLM. PROCESS AND APPARATUS FOR THE EVAPORATION OF PULP WASTE LIQUORS.

The heat of the stack gases is so used that the gas becomes saturated with water vapor, whose heat condensation is used by indirect heat transfer for the warming of the waste liquors.

1314. 15,059. Nov. 7, 1930. CARBONFIX (Société à responsabilité limitée, Paris). METHOD FOR THE PREPARATION OF A PURE, NEARLY ASH-FREE CARBON.

Crude lignin, obtained by the precipitation of warm black liquors with acids, is carbonized, treated with potassium and sodium carbonate solutions and finally with acids.

1315. 15,110. DEC. 3, 1931. LEIF GLÖERSEN. ARRANGEMENT FOR ROTATING OVENS AND DISC EVAPORATORS.

The invention consists of arrangement for the utilization of the heat in the gases from the soda oven and the disc evaporators.

15,219. DEC. 10, 1931. *See* Swedish Patent 75,847.

1316. 15,259. MARCH 8, 1932. OTTO NORDSTROM. PROCESS FOR UTILIZING THE GASEOUS SULPHUR COMPOUNDS FROM THE SODA OVEN GASES, THAT IS FOR ENRICHING THE CONTENTS OF THE COOKING LIQUOR WITH SULPHUR COMPOUNDS IN THE MANUFACTURE OF SULPHATE PULP.

The soda oven gases are led through a layer of wood chips which were previously drenched in an alkali to thus absorb the gaseous sulphur compounds. Black liquor can be used for the drenching liquid.

1317. 15,312. FEB. 15, 1930. PATENTAKTIEBOLAGET GRÖNDAL-RAMÉN. PROCESS FOR THE PRODUCTION OF WASTE LIQUORS WITH A HIGH CONTENT OF ORGANIC SUBSTANCES DURING THE COOKING OF SULPHITE PULP.

The wood chips are drenched before the cooking either in the digester or in another special container with cooking acid prepared without the addition of waste liquor from previous cooks. After the wood has been completely drenched, the liquor is drained off, and the chips are then cooked with a cooking acid which has been prepared with the addition of the waste liquor from the preceding cooks.

1318. 15,425. APRIL 29, 1932. EINAR NYSTRÖM. PROCESS FOR THE "KILLING" OF THE FOAM WHICH RESULTS FROM THE WASHING OF ALKALINE COOKED PULP.

The process is used for those installations where the black liquor is separated by suction. The "killing" of the foam takes place in the black liquor cistern.

1319. 15,444. MARCH 13, 1929. W. ROSENLEW & CO. PROCESS FOR YEAST CULTURE WITH SULPHITE WASTE LIQUOR AS THE PRINCIPAL RAW MATERIAL.

During the yeast culture, the yeast solution is taken from the fermentation vat, the yeast separated from the solution and wholly or partially replaced in the fermentation tanks.

15,564. APRIL 27, 1931. See Swedish Patent 53,417.

1320. 15,643. DEC. 17, 1932. G. E. EDLING. DEVICE FOR AIR- OR GAS-COOLING OF OVENS, ESPECIALLY SODA MELTING OVENS IN SULPHATE MILLS.

15,644. JAN. 24, 1933. *See* Swedish Patent 78,493.

1321. 15,731. FEB. 27, 1931. E. OEMAN AND SVEN H. LEDIN. PROCESS FOR THE DISTILLATION OF "FLOATING ROSIN" PRECIPITATED AS A BY-PRODUCT IN THE MANUFACTURE OF SULPHATE PULP.

The distillation takes place by means of gases or vapors in a liquid immiscible with the rosin for the purpose of separating the fatty and resinic acids.

1322. 15,831. OCT. 14, 1932. S. GIDEON SÖDERHOLM AND EINAR NYSTRÖM. WALL FOR SODA OVEN.

A method of water cooling.

15,934. DEC. 29, 1931. *See* Germant Patent 554,826.

15,952. MARCH 23, 1933. *See* German Patent 583,850.

16,008. APRIL 28, 1933. *See* Norwegian Patent 52,815.

16,129. OCT. 28, 1933. *See* Swedish Patent 80,278.

1323. 16,154. DEC. 8, 1932. S. H. LEDIN. METHOD OF PURIFICATION OF SULPHATE TURPENTINE.

Method of removal of sulphur-containing impurities by distillation with steam.

1324. 16,233. APRIL 10, 1933. J. O. ROSS ENGINEERING CORPORATION. MELTING OVEN FOR RECOVERY OF CHEMICALS AND HEAT FROM THE WASTE LIQUORS OF PULP MILLS.

16,299. MARCH 20, 1933. *See* Norwegian Patent 54,802.

Austrian Patents

1325. 117,069. Nov. 15, 1929. METALLGESELLSCHAFT A. G. PROCESS FOR THE PURIFICATION OF RAW CYMENE DERIVED FROM THE MANUFACTURE OF SULPHITE PULP.

The cymene which has been suitably purified by steam distillation is saturated with hydrogen chloride gas, then again distilled with steam and finally neutralized by alkalies and washed. In this manner it is possible to obtain the cymene from the raw material in pure form without any loss. The process also allows the recovery of accompany substances. One hundred kilograms of technically pure cymene yields 77 kilograms of chemically pure cymene and 13 kilograms of by-product.

1326. 117,832. JAN. 15, 1930. R. W. STREHLENERT. PROCESS FOR THE MANUFACTURE OF COMBUSTIBLE MATERIAL FROM A MIXTURE OF WOOD REFUSE AND SULPHITE WASTE LIQUOR, AS WELL AS THE COMBUSTIBLE MATERIAL PREPARED THROUGH THE PROCESS.

The mixture is so treated that the dried substance coming from the waste sulphur liquor contains from 25 to 60 per cent of dried matter. The mixture is dried to its drying limit and immediately thereupon subjected to a heat treatment at about 200 degrees C. for the purpose of obtaining an amorphous non-hygroscopic powder which is finally pressed into pellets.

1327. 118,229. FEB. 15, 1930. I. G. FARBENINDUSTRIE, A. G. PROCESS FOR THE PURIFICATION OF THE WASTE SULPHATE LIQUOR BY REMOVING THE ORGANIC SUBSTANCES.

The liquor is treated with manganic or manganous salts of the alkalies.

1328. 118,863. AUG. 15, 1929. A. BOL. BÄSTA. PROCESS FOR THE MANUFACTURE OF YEAST.

Sulphite waste liquor or other solutions from wood which contains sugar are the starting products. The yeast culture follows under violent aeration so that not only is the formation of alcohol considerably hindered, but also during the fermentation the sulphur dioxide gas and other poisonous substances forming are continually removed. A thorough washing removes the sulphur dioxide adhering, as well as the gas found in the inner part of the yeast cell.

1329. 119,042. APRIL 15, 1930. METALLBANK & METALLURGISCHE A.-G. PROCESS FOR THE TREATMENT OF THE RELIEF GASES FROM CELLULOSE DIGESTORS IN ABSORPTION TOWERS.

The interior of the absorption tower filled with lime

stone is cooled so low that by regulating the calcium content of the recovered liquor the relief gases which contain readily condensed substances such as cymol, can be separated. The shower water and the gases from the digester can be cooled before entering the absorption tower in a refrigerator system.

1330. 119,490. May 15, 1930. I. G. Farbenindustrie A.-G. Process for the purification or regeneration of alkali liquors containing organic substances as impurities.

The organic material is oxydized to carbonic acid by treating the liquor in autoclaves with oxygen or gases containing oxygen at temperatures over 100 degrees C. and at pressures over one atmosphere. The resulting alkali carbonate is converted to the hydroxide in the usual manner by chalk.

1331. 122,528. Dec. 15, 1930. Procédés Navarée société anonyme, Lyon, France. Process for the removal of silicic acid from the waste liquor in the manufacture of pulp.

The waste liquor is led, in a hot condition, over the desired plant or animal materials which are in a condition to give acids by hydrolysis. In this matter the process goes to neutrality whence the entire silicic acid is separated and removed by a separation process such as centrifuge, filtering, pressing, etc., from the liquor.

1332. 122,533. Dec. 15, 1930. Emil Hornstein. Artificial stone.

In the manufacture of porous stone from gypsum or the like distributed in a foam, which may be previously prepared or formed in situ, use is made of sulphite cellulose lye as the foaming agent.

123,852. March 15, 1931. *See* German Patent 523,485.

1333. 124,724. May 15, 1931. I. G. Farbenindustries A.-G. Process for the purification of solutions of metallic salts which contain organic matter as impurities.

The solutions of metallic salts are treated at temperatures over 130 deg. C. with oxygen or gases containing oxygen, at pressures over one atmosphere, until the organic matters are completely oxidized.

1334. 125,163. June 15, 1931. Vereinigte Mautner-Markhof'sche Presshefe Fabriken. Process for the preparation of a suitable wort for yeast culture from sulphite waste liquor or other solutions obtained from wood containing sugars.

While the waste liquor is still in a warm condition, it is neutralized and aerated. The materials are added in such quantities so that the liquor remains alkaline to litmus paper after the aeration and subsequent settling. Finely divided calcium carbonate, limestone or caustic sludge from the sulphate process is added in stages as the neutralization means.

1335. 125,675. July 14, 1931. Max Honig and Walter Fuchs. Process for the preparation of tanning extracts from the waste liquor of sulphite pulp.

The original lignin sulphonic acid can be changed into pure tanning acids through the addition of alkali or alkaline earths at a specific hydrogen ion concentration of 9.0 to the cooking liquor. This mixture is allowed to react for one hour in order to separate the calcium oxide, and also the aldehyde sulphurous acids bound to the organic substances as an insoluble calcium sulphite.

1336. 125,965. Sept. 15, 1930. M. Fischl's Sohne. Process for the purification of sugar syrups, especially from molasses, wood sugar syrup and sulphite waste liquor, for the purpose of manufacturing alcohol and pressed yeast, by treatment with absorption means.

The syrup or the starting products containing carbohydrates of syrups are brought to a concentration of 30 degrees Be., preferably without the introduction of heat, and then treated with absorption means, filtered, decanted and centrifuged.

1337. 126,600. Sept. 15, 1931. Karl Ehninger and Ernst Philippi. Apparatus for concentrating sulphite cellulose waste lye by freezing.

1338. 126,989. Oct. 15, 1931. Procédes Navarre, Lyon. Process for the recovery of rosin solutions in the cold state.

The cold solution of caustic soda is displaced by a cold solution of other free mineral liquors whose concentration is not more than an equivalent of 7 grams of caustic soda per liter.

1339. 129,792. April 15, 1932. O. Y. Methods Ltd. Purification process for the soap separating out from the black liquor obtained in the cooking of wood according to the sulphate process.

The raw soap or its aqueous solution, freed from pulp fibers, is treated warm or boiling hot with about ½% of a peroxide or a solution of such with agitation and subsequent salting out of the reaction mixture, so that the evil smelling and black material present in the raw floating soap is removed for the great part with the bottom water.

1340. 134,100. Sept. 15, 1931. Aktiengesellschaft Ignza Kuffner and Jacob Kuffner. Process for the fermentation of liquids containing sugars.

The fermentation takes place continually in a single tank so graded within that the addition of yeast and nutritive substances are added at the same time.

1341. 139,132. May 15, 1934. Auguste Elisabeth Heinemann. Device for separating sulphurous acid from sulphite waste liquors.

Belgian Patents

1342. 376,885. Feb. 28, 1931. Plantation et Traitement Chimique du Boil. Soc. Anon. Synthetic tanning material for sole leather.

Sulpholignin is treated with sodium alpha-naphthalenesulphonate and urea; formaldehyde or acetic acid is introduced into the mixture during the whole time of the reaction.

Czechoslovakian Patents

1343. 33,330. Firma Aktiebolaget A. Ekströms Maskinaffär. Process and device for the indirect evaporation or heating of acid or alkaline cellulose liquors.

The liquids in their course through the device are led in such a manner by special means along the heating surface, that its speed in relation to the heating surface is so great that under the given relations, that is between the temperature of the heating medium and the composition of the liquid, no or almost no sediment can fasten to the heating surface. By using steam as a heating medium with a temperature which is higher than 110°C., the liquid has during its course through the heater, a pressure which is higher than that prevailing in the cellulose cooker.

1344. 39,534. Arnold Brobeck. Process and arrangement for the heating of cellulose waste liquor.

The idea of the invention is to prevent the incrustation formation during heating, by having all heating surfaces which come in contact with the liquor of a highly polished surface.

1345. 42,934. Erik Rinman. Process for the alkalization of the waste liquors resulting from the manufacture of sulphate and sulphite pulp to prepare it for dry distillation.

The alkalization takes place by means of barium or

strontium oxide or hydroxide or mixtures of both, and in combination with a neutral substance such as coal dust. Besides oxides or hydroxides of calcium, magnesium, aluminum, zinc or iron or mixtures are added in a pulverized form to the waste liquors.

Hungarian Patents

1346. 106,725. Aug. 1, 1933. Dezso Fekete. Fuel briquets.

Briquets made as usual are treated with sulphite cellulose lye and dried at 250-350° or sprayed with 15% water glass. Solidity increases, and the briquets do not crumble.

Japanese Patents

1347. 91,804. June 13, 1931. Kisomatu Hyogoya. Fuel briquet.

Briquets are formed from a mixture of powdered anthracite, concentrated waste sulphite pjulp solution and sodium silicate and dried. During the dry, lime water is sprayed on the briquet.

1348. 93,768. Dec. 1, 1931. Seisuke Kodama. Purification of waste sodium hydroxide solution.

The waste sodium hydroxide solution used for treatment of cellulose and containing beta- and gamma-celluloses is purified by treatment with lead, its oxide or hydroxide.

Russian Patents

1349. 29,705. Oct. 21, 1931. E. I. Gribov. Sizing paper.

Black sulphate liquor obtained in the manufacture of straw cellulose is used together with aluminum sulphate mordant for sizing.

1350. 31,132. Sept. 30, 1933. D. A. Frank-Kamenskii. Recovering sulphite concentrates.

Sulphite concentrates are injected through nozzles into kilns filled with coarse quartz.

1351. 34,911. Feb. 28, 1934. E. I. Gribov. Sizing paper.

Black liquor from straw-cellulose manufacture is introduced alone or together with a rosin emulsion into the paper pulp and aluminum sulphate is added.

AUTHOR INDEX

Aktiebolaget A. Ekström, 1217.
Aktiebolaget Bästa, 1173, 1183, 1218, 1220, 1289, 1328.
Aktiebolaget Karlstads Mekaniska Verkstad, 1257.
Aktiebolaget Svenska Maskinverken, 1102.
Akt.Ges. für Zellstoff-und Papierfabrikation, 1137, 1154, 1155.
Aktiengesellschaft Iznza Kuffner und Jacob Kuffner, 1340.
Aktieselskabet Sulfitpatenter, 1304.
Aktieselskabet Toten Cellulosefabrik, 1302.
Apler, T. N. J:son, 1263.
Appareils et evaporateurs Kestner, 1203.
Baddiley, James, 909.
Baer, Jean, 1195.
Baker, Webster E. Byron, 943.
Barbisan, Luciano E., 1197.
Barbou, Pierre A., 1187, 1188.
Barker, Maurice E., 977.
Barnängens Tekniska Fabrikers A. Bol., 1223.
Bates, J. S., 1262.
Bauer, J., 1244.
Bent, Leavitt N., 965.
Bergius, Friedrich, 967.
Bergström, H. O. V., 1269, 1278, 1283, 1285.
Bjorn, E. A. V., 1236.
Bjorkgren, L., 1231.
Bommer, Max, 924.
Borcherdt, Waller O., 900.
Bradley, Linn, 886, 895-897, 899, 915, 927, 929, 940, 953, 958, 959, 968, 982, 987, 1002, 1031, 1036, 1055.
British Dyestuffs Corp., Ltd., 1228.
Brobeck, Arnold, 942, 1219, 1344.
Brown, Henry L., 922.
Bryson, Tandy A., 921.
Bunbury, H. M., 1080, 1089.
Bunde, Leo F., 1029.
Burt, Boulton and Haywood, Ltd., 1098.
Butler, James D., 1007.
Calcott, Wm. S., 1023.
Cane, S. P., 1079.
Carbonfix, 1143, 1314.
Casaburi, Vittorio, 1157.
Cederqvist, K. N., 1269, 1278, 1283, 1285.
Chamottefabrik Thonberg A.-G., 1159.
Chemische Fabriken Kurt Albert G. m. b. H., 1129.
Chemische Werke, 1101.
Chuvikovskii, Sergei I., 892.
Courtlaulds, Ltd., 1148.
Cross, Charles F., 935, 960.
Dambacher, Fritz, 1008.
Darling, E. R., 1074.
Deleux, Rene, 1179.
Deutsche Linoleumwerke A.-G., 1279.
Diaponfabrik Herbert Krull G. m. b. H., 1115.
Distillers Co., Ltd., 1264, 1301.
Dunbar, Thomas I., 925, 1019.
Dupont, George H., 1215.
Durchman, Lauri I. L., 1056.
Eberhard Hoesch und Sohne, 1122.
Edling, G., 1270, 1320.
Edmondson, Ralph S., 969, 970.
Ehninger, Karl, 1337.
Eickel, Willy, 1103.
Eigerus, Ernest, 1308.
Ekman, G., 1247.
Ekström, P. G., 1250, 1252.
Elgerus, Ernest, 908.
Elphick, Frederick C., 1098.
Englestad, Alf, 935, 960.
Erz- und Kohle-Flotation G. m. b. H., 1206.
Etablissements et laboratoires Georges Truffant, 1193.
Faerber, Eduard, 967.
Falek, Oskar, 1026.
Falla, Fernando, 893.
Fayard, Jean F. H. de, 1215.
Fekete, Dezsö, 1346.
Felix, Friedrich, 924.
Feuerstein, Kurt, 1142, 1290.
Firma Aktiebolaget A. Ekströms Maskinaffär, 1343.
Firma Ewald Dörken, 1117.
Firma Paul Lechler, 1161.
Franke, Oskar, 1168.
Frank-Kamenskii, D. A., 1350.
Franzen, Hans, 991.
Freeman, Horace, 974.
Fried. Krupp Grusonwerk A.-G., 1210.
French, Edward H., 906, 966.
Frölich, Harsolaw, 924.
Fuchs, Walter, 1335.
Gade, Max, 919, 1072, 1109, 1266.
Gärdin, S. A., 1241.
Geigy, J. R., A.-G., 1106, 1107.
Geijer, C. A., 1253, 1254.
Chezzi, Paoul, 1191.
Gillespie, Wilbur F., 1009.
Glöersen, L., 1284, 1310, 1315.
Goodell, Edward G., 998, 999, 1000, 1162.
Gorham, Adolf, 1015.
Gothner, F. I. F., 1287.
Gray, James R., 1098.
Gribov, E. I., 1349, 1351.
Grieshaber, Fritz, 924.
Grondona, Charles A., 904.
Hägglund, Erik, 894, 1108.
Haglund, Gustaf, 891, 907, 992, 1010, 1049, 1248, 1256, 1274, 1307.
Hailwood, Anthony J., 909, 910.
Hansen, G. A. N., 1239.
Harmon, Carlyle, 1022, 1182, 1290.
Hasselström, Torsten, 1038.
Heather, H., 1079.
Hebbs, L. G. S., 1079.
Heijkenskjold, Gustaf O. W., 962, 1271.
Heinemann, Auguste E., 1213, 1341.
Heinemann, Karl, 1052.
Heinrich Koppers A.-G., 1086.
Held, Robert, 991.
Hellström, A., 1277, 1300.
Hene, Emil, 1120.
Henry, Robert S. T., 1085.
Hernosands, Verkstads och Varv A. B., 1258.
Hill, Roger B., 993.
Hodges, Paul, 1043, 1044-1047.
Hoffman, Walter F., 989.
Höganäs-Billesholms Aktiebolag, 1268.
Holmes, J., 1076.
Holmes, Mathew, 969, 970.
Holzhydrolyse A.-G., 1176.
Honig, Max, 1335.
Hoode, Martin, 1295.
Hooker, Albert H., 941.
Hornstein, Emil, 1332.
Howard, Guy C., 931, 944, 948, 994, 1016, 1022, 1035, 1054, 1065, 1146, 1150, 1182, 1280, 1292.
Hundt und Weber G. m. b. H., 1149.
Hunicke, Clarence C., 1051.
Hyogoya, Kisomatu, 1347.
I. G. Farbenindustrie Akt.-Ges., 1105, 1121, 1127, 1131, 1141, 1144, 1153, 1169, 1170, 1181, 1185, 1212, 1230, 1249, 1297, 1303, 1327, 1330, 1333.
Imperial Chemical Industries, Ltd., 1080, 1089, 1211.
Industrikemiska Aktiebolaget, 1145, 1158, 1171, 1172, 1299, 1312, 1313.
Irinyi, Arnold, 1091.
Jaeck, Wolfgang, 924.
Johnstone, Edward J., 996.
Jones, Rupert S., 930.
Kalb, Ludwig, 1100.
Karlstrom, A. M. R., 1233.
Kenety, Wm. H., 963.
Kernin, Alfred G., 1021, 1037, 1050.
Kingcome, A., 1076.
Knichalik, Paul, 1125, 1130, 1135.
Koch, Friedrich, 967.
Kodama, Seisuke, 1348.
Komarek, Gustav, 951.
Kress, Otto, 971.
Kürschner, Kurt, 1192.
Kullgren, C. F., 1276.
Kumler, Ralph W., 975.
Lauderman, Vincent A., 955.
Ledin, Sven H., 1321, 1323.
Leek, Thomas G., 936.
Lewinski, Helmuth von, 1184.
Leyst-Küchenmeister, Carl, 1114.
Liachovetskii, Grigory I., 892.
Lidvall, N. A. F., 1286.
Liljeholmens Stearinfabrik A. Bol., 1293.
Limburg, Hyman, 1005.
Lindblad, A. R., 1222, 1224, 1227, 1232, 1235, 1245.
Lundström, Torstem O. H., 1011, 1282.
Ludwigsen, Matthias, 950.
M. Fischal's Sohne, 1336.
McGlynn, Richard P., 1089.
Mackay, Alfred, 926.
McKee, Charles R., 920.
McKee, Ralph H., 1020, 1216.
McKeefe, Edward P., 886, 895, 896, 897, 899, 915, 927, 929, 940, 953, 958, 959, 968, 987, 1002, 1031, 1036, 1055.
Magnusson, G., 1240.
Mallery, Arlington H., 914.
Mead Pulp and Paper Co., 1073.
Mead Research Engineering Co., 1178.
Melville, Alexander, 1085.
Menz, H., 1077.
Merrill, Albert D., 903.
Metallbank und Metallurgische A.-G., 1329.
Metallgesellschaft A.-G., 1078, 1104, 1136, 1273, 1325.
Metzger, Richard, 985.
Meyer, Erwin, 1084.
Michelson, Carl H., 917, 1291.
Millar, James T., 1085.
Mo och Domsjö Aktiebolaget, 1199, 1261.
Montmollin, G. de, 924.
Morris, D. F., 1004, 1068.
Morterud, Einar, 1123, 1128, 1288.
Müller, Oskar A., 913, 1110, 1126, 1140.
Murdock, Harold R., 1001.
Neuhof, Bruno, 1097, 1175.
Nikaido, Yasujuro, 978.
Nordström, Otto, 1025, 1316.
Norrbin, T. S. F., 1229.
Nyström, Einar, 1318, 1322.
O. Y. Methods Ltd., 1208, 1339.
O'Connor, J. J., 1004, 1068.
Öman, Erik, 1048, 1321.
Oetken, Frederick A., 995.
Oglieth, Bernardino, 1194.
Olsson, Elis, 1042.
Patch, Richard H., 1008.
Papeteries Navarre, 1075, 1198, 1260.
Patentaktiebolaget Gröndal-Ramén, 1092, 1094, 1119, 1124, 1139, 1147, 1174, 1209, 1259, 1266, 1317.
Pauly, Hermann, 1142, 1290.
Pearson, Stanley, 930.
Peebles, David, D., 898.
Peterson, Paul D., 1032.
Philippi, Ernst, 1337.
Phillips, Max, 973.

Plantation et traitement chimique du Boil. Soc. Anon., 1342.
Pyhälä, Evald, 964, 1281.
Rafton, Harold R., 911.
Reese, Charles H., 984.
Richardson, Roger W., 1013.
Richter, George A., 888, 889, 912, 933, 949, 956, 957, 979, 983, 1033, 1041, 1053, 1057-1060, 1062-1064.
Rinman, Erik L., 946, 961, 981, 1012, 1069, 1083, 1084, 1095, 1132, 1151, 1196, 1255, 1294, 1345.
Robert Weber Akt. Ges. Drentwede, 1116.
Robeson Process Co., 1090, 1177, 1205.
Rosenblad, C., 1234.
Ross, J. O., Engineering Corporation, 1324.
Routala, Oskari, 1309.
Rudeman, L., 1082.
Sailer, Wilhelm, 938, 939, 1070, 1071.
Salmang, Hermann, 1088.
Sandqvist, Hähan, 1011, 1242, 1282.
Sandstrom, G. J. W., 1287.
Schacht, Willi, 1156, 1160, 1164, 1207.
Scholler, H., 1298.
Schultz, Wilhelm, 1133, 1204.
Schultze, Willi, 918.
Schwalbe, Carl G., 1112, 1118.
Segerfelt, Bror N., 923, 947, 1138, 1152, 1190, 1214, 1246, 1265.
Shepherdson, Arnold, 909.
Smiley, Lloyd D., 1014.
Smith, Preston R., 972.
Société Anon. La Carbonite, 1202.
Société Barbon et cie, 1186, 1189.
Société des condenseurs Delas, 1093.
Société d'eludes et d'applications pur le progres de l'industrie résiniére, 1201.
Société pour l'industrie chimie a bale, 1165, 1166.
Société Procédés Navarre, 1113, 1134, 1200, 1251, 1331, 1338.
Soderholm, S. Gideon, 1322.
Spencer, George P., 990.
Spencer, Hugh M., 1006.
Spohn, John H., Jr., 905.
Steinschneider, Max, 1137.
Stora Kopperbergs Bergslags, A. B., 1226, 1232.
Strandell, Bjorn, 1306.
Stratham, Noel, 936.
Strehlenert, R. W., 1221, 1225, 1326.
Strindlund, John, 954.
Strupp, Ernst, 1100, 1184.
Tellier, Roy G., 934.
Textor, Clinton K., 1028, 1066, 1067.
Thomsen, Alfred M., 902, 916, 976.
Thordarson, Wm., 1034.
Thorne, C. B., 1081.
Tomlinson, George H., 1096, 1305.
Traquair, John, 937.
Uddeholms Aktiebolag, 1087.
Undén, Hans N., 988, 1238, 1272.
Verdier, B. H. O. de, 1275, 1296.
Verein der Spiritus-fabrikanten, 1163.
Vereinigte Mautner-Markhof'sche Presshefe Fabriken, 1334.
Virch, Paul, 1026.
Vogel, Frederick A., 986.
W. Rosenlew and Co., 1319.
Waern, Adolph W., 928, 1029, 1030.
Wagner, Charles L., 932, 974, 1051, 1061, 1111, 1311.
Wallace, Frederick J., 945, 1017, 1018, 1099.
Wallis, Theodor, 1026.
Weber, Ludwig, 890.
Webster, Wm. T., 932.
Weil, Pierre, 1186.
Wells, Sidney D., 980, 1003.
White, Alfred H., 901.
Wolf, Robert B., 887.
Wadsworth, Daniel M., 1009.
Zellstoffifabrik Waldhof, 1072, 1109, 1167, 1237, 1266.
Zschimmer und Schwarz chemische Fabrik Dölau, 1180.

SUBJECT INDEX

Adhesive, 945, 969, 970, 1000, 1016.
Black liquor
Acids from, 1307.
Alkali, action of, 981, 1132, 1151, 1345.
Alkali, recovery of, 904, 912.
Ammonia from, 1184.
Argil-carbin gel, 934.
Barking, use in, 1079.
Bleach liquor from, 1237.
Calcining, 901, 927, 956, 976, 983, 998, 999, 1000, 1037, 1049, 1125, 1130.
Carbonizing, 1118.
Causticizing, 886, 894.
Combustion, 905, 1036, 1096, 1111, 1124, 1156, 1214.
Concentration, 1042, 1152, 1158.
Cyanides from, 1184.
Digesting liquor from, 891, 895, 896, 897, 899, 902, 923, 929, 940, 941, 957, 958, 959, 979, 982, 987, 989, 1028, 1031, 1033, 1053, 1055-1060, 1062, 1063, 1066, 1067, 1139, 1174, 1215, 1251, 1259, 1265.
Distillation, 1255, 1294.
Dry, 946, 974, 975, 1012, 1069, 1083, 1100, 1196.
Steam, 1202.
Electrolytic cell for, 936.
Evaporation, 893, 898, 1024, 1048, 1051, 1093, 1101, 1102, 1119, 1122, 1123, 1136, 1162, 1171, 1172, 1203, 1219, 1226, 1234, 1257, 1299, 1313, 1315, 1343.
Fermentation, 980.
Foam
Chemicals from, 932.
Killing of, 1318.
Separation of, 922.
Foaming, prevention of, 1003.
Formic acid from, 1075, 1198, 1260.
Furnaces, 928, 988, 1021, 1029, 1030, 1050, 1061, 1238, 1239, 1240, 1258, 1270, 1272, 1275, 1284, 1296, 1310, 1320, 1322, 1324.
Hydrogen sulphide, removal of, 1002.
Hydrogenation, 1245, 1249.
Neutralizing, 915.
Odors, removal of, 914, 947, 1025, 1138, 1190, 1201, 1278.
Organic content, high, 907.
Organic matter, precipitation of, 949.
Oxidation, 1105, 1131, 1230, 1327, 1330.
Phytosterol from, 1242, 1282.
Purification, 930.
by absorbents, 1078.
Reduction, 1235, 1311.
Reuse, 937, 1041, 1108, 1288.
Rosin recovery, 906, 966.
Silica removal, 961, 1084, 1095, 1112, 1134, 1200, 1331.
Sizing material, 1349, 1351.
Sodium acetate from, 886, 894.
Sodium carbonate from, 1064.
Sodium hydroxide from, 1113, 1127.
Sodium oxalate from, 1020.
Sulphur dioxide, treatment with, 968.
Turpentine, purification of, 1009.
Briquetting agents, 890, 951, 967, 990, 1082, 1103, 1164, 1191, 1221, 1225, 1227, 1229, 1286, 1346, 1347.
Chlorolignin, 913, 1126.
Alkali salts, 1140.
Charcoal
Active, 977, 978, 1074, 1120, 1143, 1314.
Adsorptive, 1194.
Cymene, 1325, 1329.
Degreasing agents, 1046.
Deinking process, 1116.
Emulsions, use in, 972, 1005, 1084.
Fertilizers, 1001, 1034, 1114, 1141, 1144, 1153, 1181, 1297.
Floor covering, 1279.
Flotation reagents, 1039, 1040, 1043, 1206.
Fuel, 1210.
Fungicides, 1032, 1098, 1157, 1179, 1295.
Inks, printing, 950, 1133, 1204.
Insecticides, 1032, 1034, 1193, 1295.
Leather, artificial, 993.
Lignin, 1035, 1054, 1065, 1276.
Adhesive, use as, 1016.
Alkali, action of, 1137.
Ammonia, reaction with, 1228.
Animal fibers, treatment of, 926.
Briquetting agent, 967.
Carbonizing, 1314.
Dispersing agent, 960, 1022, 1182, 1280.
Filling material, 1176.
Paints, use in, 935.
Plastics from, 1090.
Precipitation, 1292.
Preparation, 944.
Reduction, 1232.
Varnish, use in, 973.
Lime sludge, 1262, 1268.
Filler, use as, 911, 971, 1004, 1068, 1073.
Heat-insulating composition, 1085.
Pigment, use as, 955.
Lubricant, 1128
Metal cleaning, 1045.
Paints, 935, 1185.
Pine oil
Fatty acids from, 1303
Floor covering, 1279.
Purification, 1241.
Plastics, artificial, 1090, 1195.
Putty, 1306.
Refractory articles, 1159.
Relief gases, 1014, 1104, 1312, 1329.
Recovery, 963.
Utilization, 887.
Resins, artificial, 1177, 1205, 1244.
Road-making materials, 1129, 1161.
Rosin, recovery of, 1233.
Rosin, liquid, 122, 1223, 1277.
Distillation, 1231, 1321.
Emulsifier from, 1236.
Purification, 1293.
Rosin from, 1285.
Soap from, 1300.
Rust inhibitor, 1047.
Soap, black liquor, 917, 1208, 1222.
Phytosterol, 1282.
Purification, 1287, 1291, 1339.
Refining, 964, 1281.
Rosin, recovery from, 965.
Sodium lignosulphonate, 943.
Stone, artificial, 1097, 1175, 1332.
Sulphite waste liquor
Alcohol from, 1015, 1109.
Alcohol fuel, use in, 1077.
Alkali from, 1309, 1232.
Alkali cooking liquor from, 1207.
Alkalization, 1345.
Ammonia, recovery of, 1013.
Barking, use in, 1247.
Bisulphite recovery, 1092.
Bleaching agent, 908.
Brick, use in, 1086.
Calcium sulphite from, 948.
Clarifying, 984, 994.
Coating agent, use in, 920.
Corrosion inhibition by, 1023.
Deflocculating agent, 900.
Digesting agent from, 1139, 1308.
Drying, 1326.
Dyeing, use in, 909, 910, 924, 985, 1121, 1165, 1166, 1170, 1211, 1212.
Evaporation, 916, 954, 995, 1048, 1091, 1158, 1209, 1219, 1226, 1252, 1254, 1257, 1267, 1305, 1343, 1344, 1350.
Fermentation, 919, 1072, 1154, 1155, 1163, 1250, 1264, 1298, 1301, 1340.
Freezing, 1337.
Furfural from, 933.
High organic content, 1010, 1094.
Hydrogenation, 1224.
Lignin, precipitation of, 1054, 1065, 1292.
Lime, action of, 1146, 1150.
Nitrogen fixation of, in, 1271.
Organic matter from, 1186.
Oxidation, 888, 1302.
Phenols from, 1224.
Pickling liquor from, 1243.
Purification, 1007.
Refractory composition, 1088.
Regeneration, 1304.
Reuse, 903, 925, 1147.
Sizing, use in, 920.
Sulphur dioxide removal, 1052, 1135, 1187, 1188, 1213.
Textiles, treatment of, 1026.
Turpentine from, 992.
Tall oil
Acids from, 918, 991, 1169.
Coating composition, 1117.
Core binder, use in, 1080.
Emulsifying agent, 1089.
Floatation agent, 1039, 1040.
Oxidation, 1008.
Phytosterol from, 1011.
Plastics, use in, 1195.
Refining, 1038.
Sizing, use in, 996.
Tanning agent, 938, 939, 986, 1017, 1018, 1070, 1071, 1099, 1106, 1107, 1110, 1115, 1121, 1168, 1178, 1323, 1335, 1342.
Vanillin, 1142, 1290.
Wetting agent, 1217.
Wood, artificial, 1192.
Yeast, 962, 1173, 1183, 1218, 1220, 1289, 1319, 1328, 1334, 1336.

Revised Simplified Practice for Photographic Paper, Approved by Industry

WASHINGTON, D. C., January 15—The current revision of Simplified Practice Recommendation R98, Photographic Paper, has been accorded the required degree of acceptance by the industry and is to become effective February 1, 1936, according to an announcement by the Division of Simplified Practice, National Bureau of Standards, Department of Commerce.

The original Simplified Practice Recommendation established a simplified list of sizes of photo finishing, portrait and commercial paper, and the width and length of single and double weight rolls. It was approved at a general conference held in 1928, and reaffirmed without change in 1930.

The current revision eliminates one size of the original schedule and adds five new sizes. The revised recommendation will remain in effect until it is again revised by the Standing Committee of the industry.

Effect of Beating and Pigmentation On Sheet Properties*

William R. Willets[1]

Abstract

Laboratory investigations on the beating and pigmentation (with titanium dioxide) of domestic bleached sulphite stock have shown:

1. *That beating increases the retention of titanium dioxide,*
2. *That beating results in increased strength and decreased opacity,*
3. *That the decrease in opacity, caused by beating, is greatest in the case of unpigmented paper. As the titanium dioxide content increases the effect of beating in decreasing opacity becomes much less.*
4. *That the loss in strength resulting from pigmentation to secure a given opacity of a beaten stock is much less than the gain in strength resulting from beating.*
5. *That since only small amounts of titanium dioxide are needed to obtain given opacity results, the ash content is not greatly increased and consequently the strength is not affected to any great extent.*

It has been an accepted fact that beating causes marked changes in fiber structure and characteristics. As a matter of fact, it has been an axiom in the paper industry for many years that "Paper is made in the beater."

Likewise the effect of titanium dioxide in increasing the opacity, brightness and whiteness of paper has also been an acknowledged fact, although this pigment has not been subjected to as rigid a scrutiny and study as the beating operation, merely because of its comparatively recent introduction to the paper industry.

The work reported herein represents an attempt to study the effect of both beating and pigmentation on certain significant sheet properties, which are of a type permitting laboratory investigation. No claims are made regarding the application of these purely experimental results to specific mill conditions, but it is hoped that they may at least prove indicative.

* To be presented at the Annual Meeting of the Technical Association of the Pulp and Paper Industry, Waldorf-Astoria Hotel, New York, N. Y., Feb. 17 to 20, 1936.

[1] Member TAPPI, Paper Development Laboratory, Titanium Pigment Co., Inc., 105 York Street, Brooklyn, N. Y.

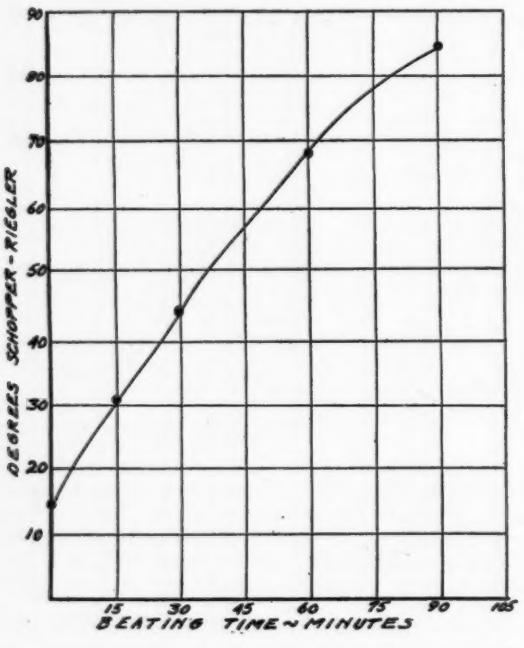

FIG. 1
Beating curve.

General Procedure

A good grade of domestic bleached sulphite pulp was processed in a 3/4 pound Noble and Wood beater for varying lengths of time (using the same roll setting) at 2 per cent consistency (150 grams of pulp in 7.5 liters). Before adding to the beater the pulp was thoroughly disintegrated by means of a high speed stirrer.

After dumping, the stock was diluted to 15 liters, and an aliquot taken and diluted to 0.2 per cent consistency for freeness tests, which were made in the standard manner using a Schopper-Riegler beating degree tester. The beating curve is given in Fig. 1.

Thirteen liters of the remaining stock were diluted to 15 liters and stirred for 10 minutes with the addition of 2 per cent dry rosin size. Three liter aliquots were then taken and stirred for 15 minutes with the addition of varying amounts of titanium dioxide at the start of stirring, and 3 per cent alum after 10 minutes stirring. (Cf. Appendix.)

After stirring the aliquots were diluted to 5.5 liters for the unpigmented sheets, and to 5.6, 5.7, 5.8 and 5.9 liters for the pulp loaded with 2.5, 5, 7.5 and 10 per cent titanium dioxide, respectively. This variable dilution was necessary to insure uniform basis weights.

One liter of this diluted stock was used for each sheet. The sheets were made on a standard Valley sheet mold having a 100 mesh wire 10.5 x 10.5 inches. The dilution in the sheet machine was kept constant at 6 liters, and the temperature at 70 deg. F. The pH in the sheet machine was 6.0 in all cases. (Previous work had shown the necessity of close control of all such factors—chemicals used, temperature, dilution, pH, etc) *(1)*. The sheets were couched on dry blotters using a brass roll 2 inches in diameter, weighing 16 pounds. Pressing was carefully controlled, as follows, using fresh dry blotters each time:

Pressure Lbs./Sq. In.	Number of Blotters Between Consecutive Sheets	Minutes Pressing
15	3	2
30	2	1
60	2	5
90	2	10
150	2	10

After this the sheets were virtually dry. They were then placed between single dry blotters and left in the press, at a starting pressure of 240 pounds per square inch, overnight. All sheets were conditioned for at least 24

hours in a constant humidity room maintained at 65 per cent relative humidity and 70 deg. F.

The basis weight of the sheets was approximately 47 pounds (25x38—500). Variations in basis weight were small, as may be noted from the data given in the Appendix.

Retention

The amount of titanium dioxide in the sheets was determined by subtracting the ash content of unpigmented sheets made under identical conditions from the ash content of pigmented sheets. From these data it was possible to calculate the per cent retention.

These results are given graphically in Fig. 2. It will be noted that retention increased markedly with increased beating. This agrees with the general consensus of opinion, that the retention of fillers increases with increasing hydration of the stock *(1)*.

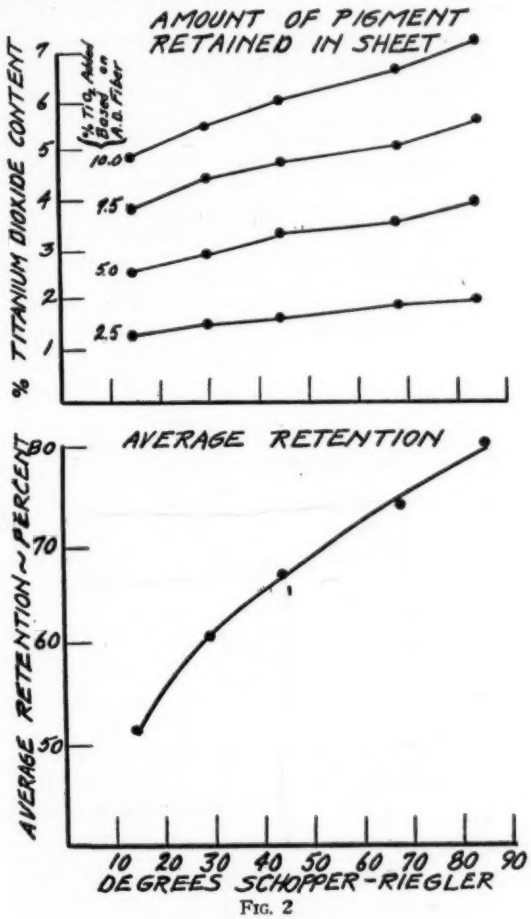

FIG. 2
Retention.

Opacity

Opacity tests were made, using the Bausch and Lomb Opacimeter, to determine the effect of pigmentation and hydration on this property.

The results obtained with varying titanium dioxide contents at different degrees of hydration are given in Fig. 3. It will be noted that the increase in opacity with increasing pigmentation is less for unbeaten stock than for beaten stock. This may readily be explained by the fact that it is easier to cause a given increase in opacity (by pigmentation) in a transparent sheet than in a more opaque one. As the initial opacity of an unpigmented sheet becomes less, as a result of beating, the opacity increase caused by a given pigment content becomes greater. This is clearly shown in the curves of Fig. 3.

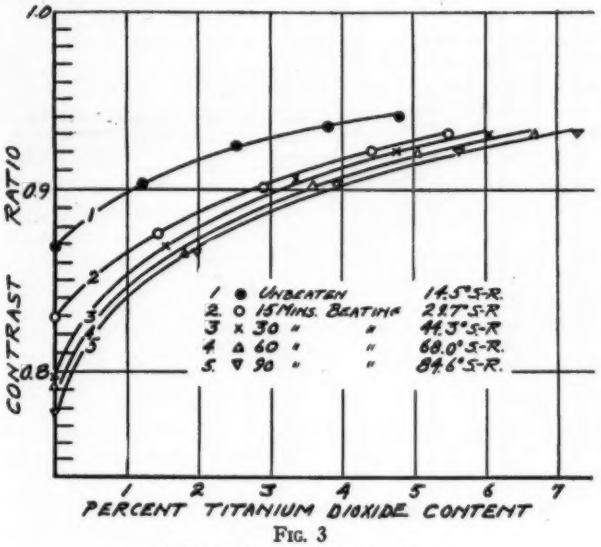
CONTRAST RATIO
1.0
0.9
0.8
1 ● UNBEATEN 14.5°S-R.
2 ○ 15 MINS. BEATING 29.7°S-R
3 × 30 " " 44.3°S-R
4 △ 60 " " 68.0°S-R.
5 ▽ 90 " " 84.6°S-R.
1 2 3 4 5 6 7
PERCENT TITANIUM DIOXIDE CONTENT

FIG. 3
Effect of pigmentation on opacity.

From the curves of Fig. 3, it was possible to plot the effect of hydration on the unpigmented sheets, and on sheets containing varying amounts of titanium dioxide. Such curves are shown in Fig. 4.

It will be noted that the decrease in opacity, resulting from beating, was greatest in the case of the unpigmented sheets. As the titanium dioxide content of the samples increased, the effect of beating in decreasing opacity became much less, and at the higher pigment contents was comparatively small.

The following explanation may indicate the reasons for this. The opacity of an unpigmented sheet of paper is governed to a certain extent by the amount, shape and size of the voids, and by the difference between the refractive indices of the air in these voids (1.00) and of the cellulose fiber (1.53). In an unbeaten sheet, the amount of air is large, that is the paper is bulky and its apparent density is low. As the fibers are beaten, the amount of air space diminishes, and consequently the opacity decreases. The same effect is noticeable in the calendering operation; here the voids are decreased because of the crushing action of the calender rolls, and, as might be expected, the opacity is lessened.

When a given amount of titanium dioxide is present in the sheet the effect on opacity of diminishing the air space is less, since regardless of these voids the ratio of the pigment to fiber, and the difference between the refractive indices of the two (i.e. between 2.55 and 1.53) is constant.

The curves of Fig. 4 indicate this clearly. It may be seen that it is a simple matter, by the use of titanium dioxide, to make a well beaten sheet as opaque, or even more opaque, than a sheet made from "free" stock. For example, all the sheets containing 2 per cent or more of titanium dioxide were at least as opaque (and in the case of the higher pigmentations, 3 per cent and over) considerably more opaque, than the unpigmented paper made from unbeaten stock.

This is an important indication, since very often paper

is not subjected to as rigorous a beating treatment as would be consistent with the development of strength, etc., since such beating would result in too great a loss in opacity. The presence of small amounts of titanium dioxide permits one to obtain the benefits of beating without a loss in desirable opacity.

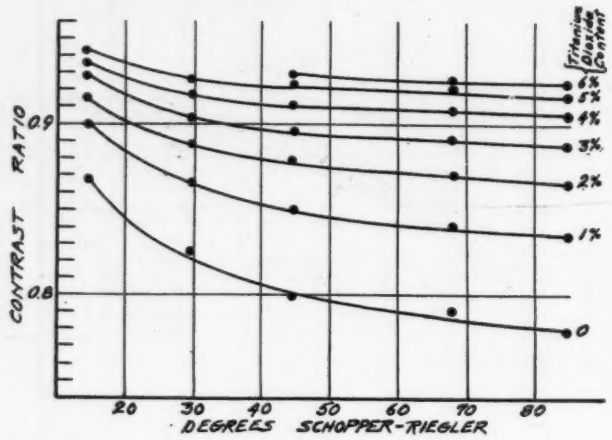

FIG. 4
Effect of beating on opacity.

Physical Characteristics

The effect of beating on the physical characteristics of the paper is given in Fig. 5. In those cases where there was a considerable difference between the characteristics of the unpigmented and pigmented sheets, the curve was drawn for the former only, where these differences were small, the average for both was used.

It will be noted that the tensile, bursting and folding strengths increased with increased beating. The data for the first two were fairly regular, and plotted in smooth curves. However, as might be expected in the case of hand sheets, the folding data were very erratic. Tearing strength and caliper decreased with increased beating.

The effect of pigmentation at the various degrees of beating is given in Fig. 6. Tensile strength data, while somewhat erratic, indicated that the presence of over about 3 per cent filler caused a definite decrease in this property. Similar indications may be noted for bursting strength. The effect of pigmentation on tearing strength was much less; with the exception of the rather erratic curve for the unbeaten stock, there was apparently no noticeable decrease in tearing strength. Similar results have been noted previously for paper made on a semi-commercial machine *(2)*.

The folding endurance data were very erratic, and no definite conclusions may be drawn from them. They are included merely to complete the record. One curve, for the 15 minute beating, showed a great loss in folding endurance with increasing filler content, while the curves for the higher beating degrees showed much less decrease.

The effect on caliper was not apparent until 3 per cent pigment content had been reached, and then the effect was only noticeable in the case of the unbeaten and 15 minute beaten stock. At any rate, the loss in thickness was very small, and might be accounted for on the basis of experimental error.

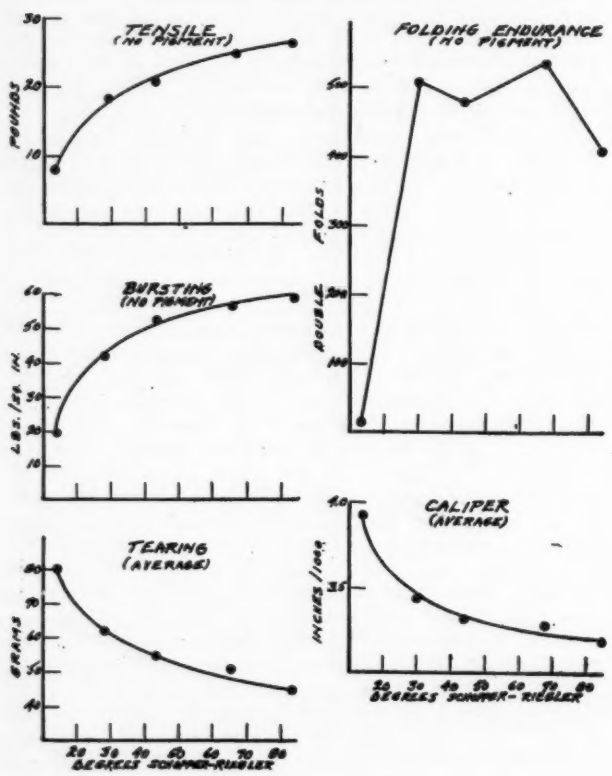

FIG. 5
Effect of beating on physical characteristics.

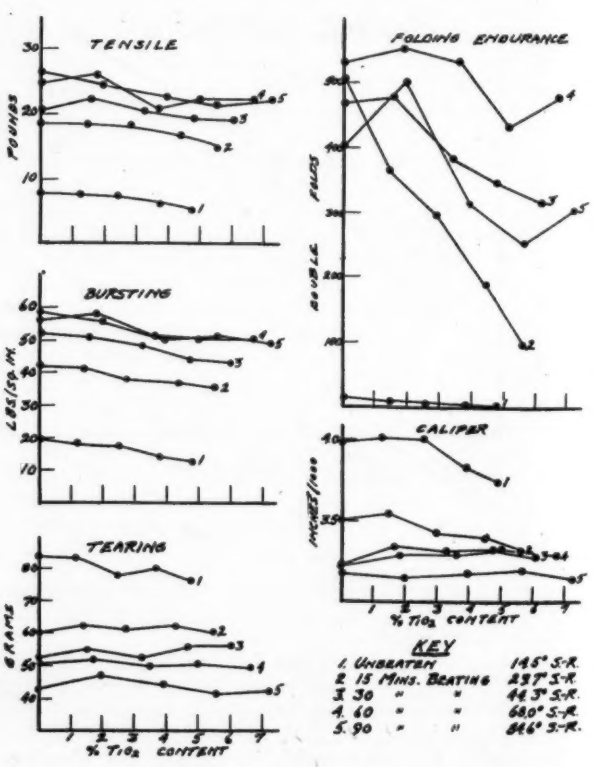

FIG. 6
Effect of pigmentation on physical characteristics.

Discussion

From the data of this report it may be seen that beating resulted in marked increases in the retention of titanium dioxide, in tensile, bursting and folding strengths, and in decreases in tearing strength, caliper and opacity.

However, the decrease in opacity was much less in the case of the pigmented sheets than for the unpigmented sheets. In other words, if it is necessary to increase strength through rigorous beating, which results in a loss of opacity in stock containing no titanium dioxide, this loss in opacity can be more than compensated for by the addition of small amounts of titanium dioxide. The loss in strength from such pigmentation is much less than the gain in strength resulting from beating.

For example, let us consider unbeaten, unpigmented stock. Its opacity in a 47 pound sheet was fairly high, approximately 0.87, but its strength was very low, 20 pounds per square inch bursting, 7.6 pounds tensile, 15 double folds and 84 grams tearing. When this stock was beaten to 44 degrees Schopper-Riegler, the strength (with the exception of tearing) was greatly increased, however, the opacity decreased seven points. Consider the same beaten stock containing 3.33 per cent titanium dioxide; the opacity, 0.912, was higher than that of the unbeaten, unpigmented stock, while at the same time the strength was much greater, 48 pounds per square inch bursting, 20 pounds tensile and 380 double folds. Naturally, beating decreased the tearing strength but this decrease was about the same, regardless of whether or not the stock was pigmented. Consequently, by combining beating and pigmenting we have, at one and the same time, increased the opacity and strength very considerably.

It should be pointed out that the type of beating also affects opacity and physical characteristics. Where paper is beaten with the end in view of securing maximum crushing and "hydrating" with a minimum of cutting, (as for glassine) the effect on opacity is greater than if the pulp is beaten with a cutting action. In the results reported herein, the beating was more of the latter type than of the former, consequently the opacity decrease was not as great as might be expected from the high beater degree figures. Unfortunately, the apparatus used in these experiments for measuring the beating degree (and in fact all such instruments) does not differentiate between cutting, crushing, "hydration," etc.

Naturally, also, the type of pulp has a great deal to do with the final effects obtained. Some pulps are inherently stronger, more opaque, etc., than others.

However, regardless of the method of beating or the type of pulp, the indications are clear that opacity may be maintained and even increased by the use of titanium dioxide, while at the same time obtaining those desirable properties developed by beating.

It should also be pointed out, that, because of its high refractive index, small particle size, etc., given opacity results can be obtained with much smaller amounts of titanium dioxide than of any other filler. Consequently the ash content of the paper is not increased to any great extent, and the strength is not affected, as would be the case if large amounts were necessary.

Literature Cited

(1) Willets, W. R., "Factors Affecting Retention," *Paper Trade J.*, 101, No. 13: 81-86 (Sept. 26, 1935).
(2) Willets, W. R., "Titanium Pigments in Printing Papers," *Paper Mill and Wood Pulp News* 58, No. 45: 15-18 (Nov. 9, 1935).

APPENDIX
EFFECT OF HYDRATION AND PIGMENTATION ON SHEET CHARACTERISTICS

Beating Time Mins.	Degrees Schopper-Riegler	Per cent Titanium[1] Dioxide Added	Per cent Ash Content[2]	Per cent Titanium Dioxide in Sheet[2]	Per cent Retention	Basis Weight 25x38—500	Opacity[3] Contrast Ratio	Tensile[4] Lbs.	Bursting[5] Lbs./Sq. In.	Tearing[6] Grams	Double[7] Folds	Caliper[8] In./1000
0	14.5	0	0.82	0	...	47.5	0.868	7.6	19.9	84.0	15.0	3.98
		2.5	2.06	1.24	50.8	47.7	0.902	7.3	18.7	83.0	8.2	4.01
		5.0	3.37	2.55	53.5	47.2	0.923	7.3	16.6	77.2	6.3	4.00
		7.5	4.66	3.84	55.0	46.8	0.934	6.2	13.8	80.0	3.1	3.82
		10.0	6.37	5.52	61.0	45.1	0.941	5.2	12.4	75.2	2.7	3.75
15	29.7	0	0.85	0	...	46.8	0.828	18.6	42.4	60.0	509.	3.51
		2.5	2.30	1.45	59.5	46.8	0.873	18.1	40.7	62.4	363.	3.54
		5.0	3.76	2.91	61.2	46.4	0.900	18.5	38.0	60.8	295.	3.42
		7.5	5.26	4.41	63.3	46.5	0.919	16.8	36.1	62.4	188.	3.39
		10.0	6.37	5.52	61.0	46.4	0.930	14.4	35.5	60.0	91.	3.30
30	44.3	0	0.93	0	...	45.3	0.798	20.7	53.0	52.0	473.	3.22
		2.5	2.52	1.59	65.3	46.8	0.872	22.2	50.8	54.4	483.	3.34
		5.0	4.26	3.33	69.6	46.5	0.912	19.7	48.1	52.0	382.	3.31
		7.5	5.65	4.72	67.8	46.8	0.923	19.3	44.1	56.8	349.	3.33
		10.0	6.99	6.06	67.0	47.5	0.930	19.0	43.3	56.8	318.	3.29
60	68.0	0	0.94	0	...	46.8	0.791	24.8	56.2	50.4	535.	3.23
		2.5	2.77	1.83	75.0	47.5	0.863	26.1	57.8	52.0	556.	3.29
		5.0	4.50	3.56	74.8	46.8	0.903	19.9	50.8	49.6	536.	3.28
		7.5	5.96	5.02	71.0	47.7	0.920	22.3	50.6	50.4	430.	3.32
		10.0	7.62	6.68	73.6	47.7	0.929	22.1	49.9	49.6	476.	3.29
90	84.6	0	1.07	0	...	46.8	0.777	26.1	58.5	42.4	402.	3.19
		2.5	3.03	1.96	80.8	47.5	0.866	24.3	55.1	46.4	504.	3.15
		5.0	4.99	3.92	82.5	45.7	0.907	22.2	49.7	43.2	314.	3.18
		7.5	6.71	5.64	81.0	47.2	0.920	22.2	50.5	40.8	250.	3.20
		10.0	8.34	7.27	80.2	47.2	0.933	22.5	49.7	42.4	304.	3.14

[1] Based on air dry fiber. [2] Based on air dry weight of paper. [3] Bausch and Lomb Opacimeter. [4] Pounds to break strip 1" wide x 6" long Scott tensile tester. [5] Perkins Mullen tester. [6] Elmendorf tearing tester. [7] Schopper folding tester. [8] Automatic micrometer (Scale to 0.0001 inch).

Water Resistance of Paper*

By Philip W. Codwise[1]

Previous work of the Water Resistance Committee of the Technical Association of the Pulp and Paper Industry has been concerned with testing water penetration through the entire thickness of the sheet, or as it is often called, the over-all size resistance, of both paper and paperboard. The work resulted in the preparation of a Standard Technical Association method for determining this property. However, the sizing, especially in paperboard, may not be distributed uniformly throughout the sheet, it may be con-

[*] To be presented at the Annual Meeting of the Technical Association of the Pulp and Paper Industry, Waldorf-Astoria Hotel, New York, N. Y., Feb. 17 to 20, 1936.
Report of the Subcommittee on Water Resistance of the Paper Testing Committee.

[1] Member TAPPI, Chemical Engineer, Beaver Wood Fibre Co., Ltd., Thorold, Ont.

centrated close to one or near both surfaces, at the center of the sheet or in any other conceivable way. Therefore the sizing properties of a sheet may present many complications and it has been the object of the more recent committee work to go somewhat deeper into the problem and to determine whether methods can be established which will distinguish between the sizing characteristics in different portion of the sheet and assign numerical values to these characteristics. This has been done by determining the sizing qualities adjacent to the surfaces of the products under consideration.

Methods for Testing Sizing Near the Surfaces

In our discussion it will be advisable to distinguish between penetration into the surface of the sheet and writing quality at the surface. The writing quality of the sheet is best determined by the pen and ink test and although such a test is fundamentally qualitative yet it probably is the most reliable test for writing quality.

For testing the sizing qualities near the surface of a sheet, in a semi-quantitative manner, the writer *(1)* several years ago developed and published a technique for testing with drops of water placed upon the surface which was described as a surface spreading test. Briefly, this consisted in delivering one cc. of distilled water upon the horizontal surface to be tested from a pipette placed with its tip just above the surface in such a way that the tip remained immersed in the drop as the water discharged. The drop was then carefully observed both for its effect in darkening the surface and for the feathering around its edge. The end point was taken at the first indication of feathering.

More recently a method of testing penetration to various depths below the surface has been described by Cobb and Lowe *(2)*. This procedure would appear to be amendable to strict quantitative interpretation and this test has therefore been made the basis of the more recent cooperative work of your committee.

Description of the Cobb Test

This test is based upon the principle of applying water at room temperature to the surface of the sheet within a confined area for definite intervals of time and subsequently determining the actual quantity of water absorbed through this surface by direct weighing. By varying the time of test a curve may be obtained showing the absorption through the surface as a result of greater penetration. As we feel that this method will find its greatest usefulness in distinguishing between the varying surface or subsurface characteristics we have confined our work to short periods of exposure employing 30 sec., 2 min., and 5 min. as the test periods.

For this investigation, four sample lots were selected giving attention to their varying sizing characteristics and attempting to get as full a range of sized surfaces as possible. Two of the lots were paperboard and two were paper. Three of the four lots had been tested and reported upon for total size resistance in previous work *(3)* and *(4)*. By comparing those results with the ones here detailed it is readily seen how supplementary size testing methods are needed by the industry. We will now describe these four samples in detail.

Sample A: This is a sheet of high finish solid manila paperboard of .018 inch caliper, and is hard sized throughout. Although similar to the sheet reported upon at the 1934 meeting it is not from the same lot. Both surfaces of this sample are what may be considered as hard sized and give a result by the semiquantitative spreading test mentioned above of 24 hours plus upon both sides.

Sample B: This is the sheet of white beater sized ledger of .005 inch caliper reported upon at the 1932 meeting. With regard to the surfaces both may be said to be hard sized and give a result by the surface spreading test of 24 hours plus upon both sides.

Sample C: This is the sheet of brown kraft wrapping paper of .004½ inch caliper used in our report of the 1932 meeting. In regard to the surfaces both sides may be said to be moderately sized although the wire side is somewhat softer sized than is the felt side. By the surface spreading test the wire side shows a 15 minute test while the felt side shows a 50 minute test.

Sample D: This is the sheet of white patent coated newsboard of .038 inch caliper reported upon at the 1934 meeting. The sizing in this sheet is in the face, or wire, side. This may be described as a soft sized sheet. By the surface spreading test the face, or wire, side is seen to be slightly sized and gives a test of 60 seconds, whereas the bottom, or felt side is practically unsized, giving a test result of 10 seconds.

The procedure developed to apply the Cobb test for cooperative testing work was as follows:

Description of Test Procedure

Apparatus Required

For this work there is required a metal ring of approximately 10 cm. inside diameter together with the proper yoke to hold it in place. This was pictured and described in the original article *(2)* and consists of a flat metal plate equipped with threaded upright rods of suitable length, a notched cross-bar and wing nuts. The upright rods are spaced slightly farther apart than the outside diameter of the metal ring and are slightly greater in length than the metal ring, they are threaded down for a sufficient distance so that the notched cross-bar can be forced tightly down upon the ring when in place and held there. Either soft rubber mats or heavy pieces of felt are needed to be placed between the sample and the metal plate. Other requirements are a balance sensitive to 0.001 gram, a stop watch, soft cloths or their equivalent and tap water of ordinary purity.

Method of Test

The test specimens should be cut to size 12½ cm. x 12½ cm. and seasoned and tested under standard conditions of 70 deg. F. and 65 per cent relative humidity. They are weighed after seasoning to an accuracy of 0.001 gram.

In conducting the test, the felt or rubber mat is first placed upon the metal plate or bed of the yoke, the sample is then placed upon it with the surface to be tested uppermost, the metal ring after wiping perfectly dry is then placed upon the sample and fastened firmly in place by the cross-bar in order to obtain a sufficiently firm joint to prevent any leakage between the ring and specimen.

To begin the test, water at exactly 70 deg. F. is poured into the ring to a depth of approximately 0.5 cm. taking care to wet the entire surface of the specimen inside the ring simultaneously and the stop watch is started at the same time. To complete the test the water is quickly poured from the ring 15 to 20 sec. before the expiration of the pre-determined test period taking great care not to drop any water upon the untested portion of the sample. Without delay the wing nuts are loosened, the cross bar swung out of the way and the metal ring removed, taking great care not to get any liquid upon the remaining surface of the test specimen. At the exact expiration of the test period the surface is vigorously mopped with a large soft rag sufficiently to remove all excess water and the surface is then checked for the absence of surface water by holding to the light and being sure that the entire test area is dull in appearance. The sample is then folded with

the tested area inside and immediately reweighed to an accuracy of 0.001 gram and the weight of the absorbed water determined in grams to 0.001 gram by difference (b).

In order to determine the area actually tested the average diameter of the wet area is now measured in cm. and the area calculated in square centimeters, (c). The result is reported in grams absorbed per 100 sq. cm. (a) and is calculated as follows: $a = 100\ (b)/c$.

Discussion of Test Conditions

The proper length for exposure has received the careful consideration of your committee and it has been decided that in order to cover the full range of sizing it was desirable to carry out the test for several different periods. As the mechanical operations involved in the test require a certain length of time it was decided to use 30 seconds as the minimum period. With experience it may be possible to carry out the test in a 15 sec. period or failing this in 20 sec. However, for the cooperative work 30 sec. was adopted as a minimum. As the next period we adopted 2 minutes and for the longest one, 5 minutes. Of course the test may be extended far beyond the 5 minute time if desired but this seems an unnecessary lengthening of the test time and also would seem to defeat one of the most important objects of the work, namely, to obtain the maximum amount of information regarding the near the surface characteristics.

It should be remarked that of the figures reported, those for IV were obtained at 50 per cent relative humidity instead of 65 per cent.

Results of Co-Operative Work

The test results from the six different laboratories expressed in grams absorbed per 100 sq. cm. of surface tested are as follows:

SAMPLE "A"—SOLID MANILA

	Surface (a) (wire side)			Surface (b) (felt side)		
Laboratory	30 sec.	2 min.	5 min.	30 sec.	2 min.	5 min.
I	0.109	0.172	0.257	0.118	0.184	0.279
II	0.086	0.157	0.245	0.093	0.170	0.258
III	0.123	0.188	0.260	0.132	0.209	0.281
IV	0.080	0.172	0.267	0.092	0.168	0.281
V	0.082	0.160	0.273	0.092	0.179	0.237
VI	0.078	0.164	0.249	0.076	0.171	0.263
Mean result	0.093	0.169	0.259	0.101	0.180	0.267
	Variation from Mean					
I	+.016	+.003	—.002	+.017	+.004	+.012
II	—.007	—.012	—.014	—.008	—.010	—.009
III	+.030	+.019	+.001	+.031	+.029	+.014
IV	—.013	+.003	+.008	—.009	—.012	+.014
V	—.011	—.009	+.014	—.009	—.001	—.030
VI	—.015	—.005	—.010	—.025	—.009	—.004
Average Variation	.0153	.0085	.0081	.0165	.0108	.0138
Average Per cent Variations	16.5	5.0	3.12	16.3	6.00	5.17

SAMPLE "B"—LEDGER

	Surface (a) (wire side)			Surface (b) (felt side)		
Laboratory	30 sec.	2 min.	5 min.	30 sec.	2 min.	5 min.
I	0.099	0.151	0.174	0.087	0.140	0.192
II	0.077	0.139	0.213	0.072	0.133	0.209
III	0.094	0.156	0.232	0.091	0.155	0.207
IV	0.061	0.140	0.202	0.058	0.128	0.192
V	0.066	0.135	0.210	0.066	0.135	0.200
VI	0.077	0.140	0.221	0.082	0.133	0.207
Mean result	0.079	0.144	0.209	0.076	0.137	0.201
	Variation from Mean					
I	+.020	+.007	—.035	+.011	+.003	—.009
II	—.002	—.005	+.004	—.004	—.004	+.008
III	+.015	+.012	+.023	+.015	+.018	+.006
IV	—.018	—.004	—.007	—.018	—.009	—.009
V	—.013	—.009	+.001	—.010	—.002	—.001
VI	—.002	—.004	+.012	+.006	—.004	+.006
Average Variation	.0117	.0068	.0137	.0107	.0067	.0065
Average Per cent Variation	14.8	4.72	6.56	14.1	4.89	3.23

SAMPLE "C"—KRAFT WRAPPER

	Surface (a) (wire side)			Surface (b) (felt side)		
Laboratory	30 sec.	2 min.	5 min.	30 sec.	2 min.	5 min.
I	0.280	0.324	0.411	0.208	0.244	0.342
II	0.217	0.339	0.422	0.141	0.255	0.334
III	0.244	0.342	0.440	0.173	0.257	0.357
IV	0.225	0.354	0.407	0.163	0.250	0.352
V	0.190	0.300	0.400	0.130	0.240	0.320
VI	0.224	0.359	0.449	0.158	0.258	0.354
Mean result	0.230	0.336	0.422	0.162	0.251	0.343
	Variation from Mean					
I	+.050	—.012	—.011	+.046	—.007	—.001
II	—.013	+.003	.000	—.021	+.004	—.009
III	+.014	+.006	+.018	+.011	+.006	+.014
IV	—.005	+.018	—.015	+.001	—.001	+.009
V	—.040	—.036	—.022	—.032	—.011	—.023
VI	—.006	+.023	+.027	—.004	+.007	+.011
Average Variation	.0213	.0163	.0155	.0192	.0060	.0112
Average Per cent Variation	9.26	4.85	3.67	11.8	2.39	3.27

SAMPLE "D"—PATENT COATED NEWS

	Surface (a) (wire side)			Surface (b) (felt side)		
Laboratory	30 sec.	2 min.	5 min.	30 sec.	2 min.	5 min.
I	0.508	0.985	2.900	0.634	1.790	3.950
II	0.269	0.562	....	0.503	1.480	3.040
III	0.325	1.060	2.030	0.596	1.860	4.990
IV	0.267	0.710	2.120	0.547	1.510	3.340
V	0.250	0.860	2.260	0.640	1.770	3.560
VI	0.322	0.730	1.900	0.669	1.740	3.320
Mean result	0.324	0.818	2.242	0.598	1.692	3.700
	Variation from Mean					
I	+.184	+.167	+.658	+.036	+.098	+.250
II	—.055	—.256	....	—.095	—.212	—.660
III	+.001	+.242	—.212	—.002	+.168	+1.290
IV	—.057	—.108	—.122	—.051	—.182	—.360
V	—.074	+.042	+.018	+.042	+.078	—.140
VI	—.002	—.088	—.342	+.071	+.048	—.380
Average Variation	.062	.151	.270	.049	.131	.513
Average Per cent Variation	19.1	18.5	12.0	8.19	7.74	13.8

Analysis of Results

It will be noted from the above tables that for the eight surfaces tested each for three different periods of time, the maximum average deviation is 19.10 per cent and the minimum is 2.39 per cent. The grand average deviation works out to 8.96 per cent which indicates that results of this test are accurate to at least 9.0 per cent. Furthermore, there was, in nearly all cases, excellent agreement among the individual results of any operator on any particular sample, in fact several laboratories commented particularly upon this feature and stated that they were pleasantly surprised at the ease with which they could check their own individual results and believe that this fact was a very favorable feature of the method.

It should be noted that this procedure grades the samples in exactly the same order as does the surface spreading test devised by the writer some years ago. In order to bring this point out clearly we are tabulating the 30 sec. results by the Cobb test with the surface spreading figure in the order of increasing degree of sizing.

Sample	Side	Cobb Test—30 sec.	Surface Spreading Test
D—Patent Coated	Felt	0.598 gram	10 sec.
D—Patent Coated	Wire	0.324 gram	60 sec.
C—Kraft Wrapper	Wire	0.230 gram	15 min.
C—Kraft Wrapper	Felt	0.162 gram	60 min.
A—Solid Manila	Felt	0.101 gram	24 hrs. plus
A—Solid Manila	Wire	0.093 gram	24 hrs. plus
B—Ledger	Wire	0.079 gram	24 hrs. plus
B—Ledger	Felt	0.076 gram	24 hrs. plus

The sizing curves (Figs. 1 and 2) were derived by plotting the results against the square root of the test time in minutes. In order to bring out the results clearly it was decided to show two graphs upon widely varying scales. One graph shows only the hard sized and medium sized sheets and this allows a sufficiently detailed scale to bring out clearly the differences between the six surfaces involved. In the other graph all four samples have been plotted. This brings the tests upon the wire and felt sides

of both the solid manila and the ledger sample so close together that they have been shown as a single line in each of these two cases.

Upon the basis of the above figures and of the known characteristics of the sheets we would suggest the following as a tentative grading for the degree of sizing as shown by the Cobb test for the 30 sec. test period. In case it were decided to employ a one minute or a two minute test period the figures would be in a similar relation as shown by the curves found herewith.

Cobb Test Grams per 100 CM²	Degree of Sizing
Under 0.05 gm.	Extremely hard sized and waterproof.
0.05 to 0.15 gm.	Very well sized.
0.15 to 0.30 gm.	Moderately well sized.
0.30 to 0.45 gm.	Slightly sized.
Over 0.45 gm.	Slack sized.

The above are of course tentative and subject to revision after tests upon a greater variety of products.

Miss R. M. Cobb, who originated this method, has been kind enough to analyze these results and comments as follows upon them:

"The results of the co-operative tests substantiate the theory presented by Cobb and Lowe *(2)* and by Cobb *(5)* that the amount of water absorption will vary directly as the square root of the test time. This is important because it means that when the absorption for one time is known it can be calculated for any other point of time on the straight line portion of the curve.

"For the soft sized sheets the penetration increases faster than the square root of the time. This indicates that in these sheets the sizing film may be thin and poor and easily destroyed by swelling; this swelling *continuously* lowers the contact angle.

"Based on these tests our conclusion would be that hard sized sheets should be tested two minutes and the results expressed: Sizing = (cc. absorbed/area) (100/area) (1/1.41) which will give absorption on 100 sq. cm. for one minute.

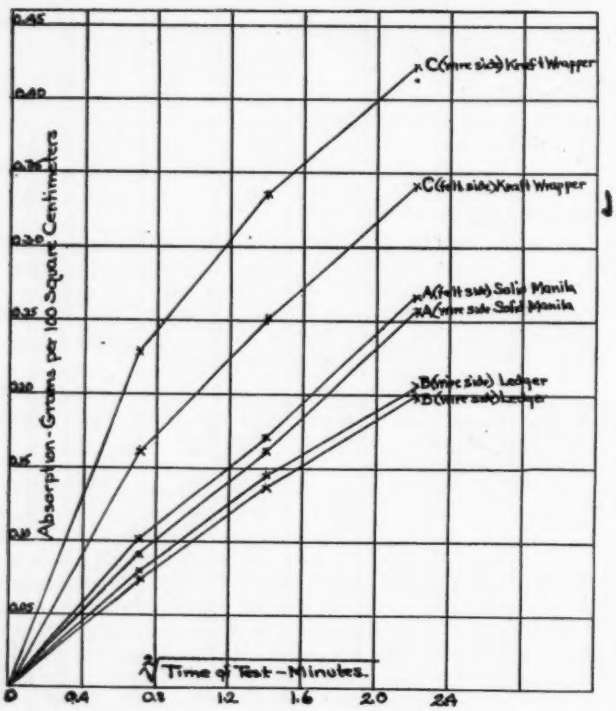

FIG. 1

Sizing curves for hard and medium sized samples.

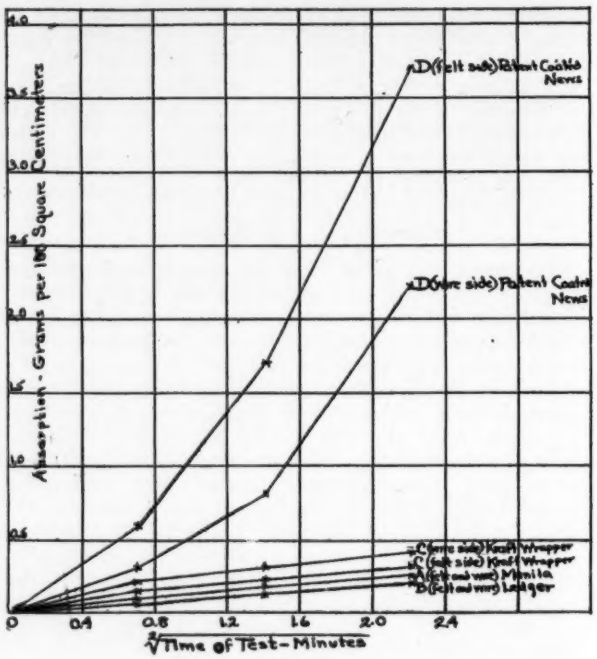

FIG. 2

Sizing curves for entire range of samples.

"Soft sized sheets may be tested for one minute, since they absorb enough in that time and it is not too far off the straight line portion of the curve."

The curves shown herewith bring out quite clearly the points emphasized above.

In order to calculate the depth of penetration into the sheet from the absorption figures, the penetration factor, taking account of the swelling of the sheet and of the amount of voids, must be known. These are especially difficult to obtain upon hard sized stock and Miss Cobb has gone to the trouble of determining these for each of the eight surfaces as follows in terms of cm. of depth into the stock to which each cc. of liquid (water) absorbed per sq. cm. will penetrate:

Sample	Penetration Factor
A—Solid manila—wire side	2.52 cm.
A—Solid manila—felt side	2.60 cm.
B—Ledger—wire side	2.89 cm.
B—Ledger—felt side	2.80 cm.
C—Kraft wrapper—wire side	1.70 cm.
C—Kraft wrapper—felt side	1.68 cm.
D—Patent coated news—wire side	1.66 cm.
D—Patent coated news—felt side	1.58 cm.

Notes and Comments Upon Procedure

It undoubtedly is possible to make a number of improvements in the test procedure and some excellent suggestions have been offered by committee members.

It has been pointed out that it is scarcely logical to adopt the maximum diameter wet as the basis of the test and refinement in the calculations would be to calculate the mean diameter during the test period and employ this figure. Also the suggestion has been made that a possible error may occur in this test in the case of a sheet that is hard sized upon the surfaces and absorbent in the interior by the water travelling along the absorbent layer and not being noticeable on the surfaces. This is a possibility and should be watched for as it could normally be detected through the swelling of the sheet in the wetted portion.

Criticism has properly been made of the details of the method on the basis that loss of moisture may occur if

time is lost during the weighing of the wet sample. Mr. Carson devised a weighing envelope in which the wet sample was enclosed immediately after being mopped dry and the samples were then weighed at leisure. This undoubtedly is a highly commendable refinement and avoids the necessity of working so rapidly in completing the second weighing.

Some question has been raised as to the possible accuracy of this procedure when applied to thin papers. One of the gratifying features of this work is that while it has been applied to samples of paper and paperboard varying from .0045 to .0380 yet there was very little variation in the accuracy of the results from the thinnest to the heaviest sheet tested. We tend to believe that this test can be applied with reasonable accuracy to paper products of any caliper or degree of sizing with the possible exception of thin tissue papers. As this work did not attempt the very thin sheets further work along this line would be necessary to determine its applicability to very thin sheets.

The matter of the usefulness of this test upon tub sized papers has been raised and of course it is impossible to state at present how useful it would be for such a purpose. It undoubtedly can be used to advantage for control work upon the sheet before tub sizing, but whether it can be used to distinguish between the efficiency of various tub sizing treatments is at least open to some question.

A suggestion which warrants consideration is that the results be reported upon the basis of grams absorbed per square meter instead of per 100 sq. cm. This would have the advantage of giving a result that in most cases would be a whole figure instead of a decimal.

Conclusions and Acknowledgement

It is our recommendation that the Cobb test be developed and adopted as a standard association method to supplement the present one which covers penetration completely through the product. This new procedure will be for the investigation of penetration into surfaces, near surfaces, and to distinguish between sizing characteristics in different portions of the depth of the sheet, all of which features are not readily distinguishable by our present procedure. There still remains to be developed a suitable method particularly applicable to distinguishing variations in the writing qualities of the sheet and specifically to measure the rate of lateral spreading in sized surfaces.

We wish to express our appreciation of the wholehearted co-operation given by the members of the committee, Miss H. U. Kiely, Miss R. M. Cobb, F. T. Carson, Allen Abrams, C. E. Libby and D. A. Cameron.

Literature Cited

(1) Codwise, P. W., "The Determination of Surface Sizing," *Tech. Assoc. Papers*, XIII:200-201 (1930).
(2) Cobb, R. M., and Lowe, D. V., "A Sizing Test and a Sizing Theory," *Tech. Assoc. Papers*, XVII:213-216 (1934).
(3) Codwise, P. W., "Water Resistance of Paper," *Tech. Assoc. Papers*, XV: 234-237 (1932).
(4) Codwise, P. W., "Water Resistance of Paperboard," *Tech. Assoc. Papers*, XVII:143-145 (1934).
(5) Cobb, R. M., *Paper Trade J.*, 100, No. 16:42-45 (April 18, 1935).

Materials of Construction Developments*

By James D. Miller[1]

The year 1935 was one of activity in the Materials of Construction field. This activity may be summed up as the introduction of new materials for the process industries, further application of materials of recent development and reports of technical investigations on a variety of subjects relating to materials of construction.

It is obviously impossible to treat in any detail the numerous references on the subject reported in the Subject Index of Chemical Abstracts. For the present purpose, mention will be made of a few trends in materials application and some references will be given of reports on work on subjects which will be of interest to the pulp and paper industry.

Sulphite Mill Alloys

The introduction of ferrous alloys for sulphite mill equipment about 1929 finally resulted in the drafting of specifications for chromium-nickel-iron castings by the Technical Association. These were adopted as an official standard, March 15, 1935. Recently a proposed change in *Note 2* has been made, concerning the use of Molybdenum, and intending to clarify the orginal intent of the specification. The change although minor will be a subject for consideration at the Annual TAPPI Meeting in Feb. 1936.

In 1930 a questionnaire on materials for sulphite pulping was sent to all pulp mills. The replies indicated that alloy steel was just being introduced into the industry. This was repeated in the fall of 1935, and the following may be noted from the replies:

(a) In contrast to the 1930 questionnaire, several mills are now 100 per cent equipped with alloy steel, all non-ferrous alloys having been replaced.

(b) No new or novel alloys are being used. This shows that within practical cost limits and present knowledge of alloy compositions, we have reached a certain plane of satisfactory service. Whether the ultimate has been reached remains to be seen.

(c) Although returns on the questionnaire were few in number, all indicated that an appreciable saving in maintenance per ton of pulp was attained by the use of alloy steel as compared to non-ferrous alloys.

References to Publications

Of special note is the symposium on materials of construction represented by papers presented before the division of Industrial and Engineering Chemistry at the 89th meeting of the American Chemical Society in New York, April 22 to 26, 1935. These papers were printed in full in the Aug., Sept., Oct. and Nov. issues of Industrial and Engineering Chemistry, and cover the major phases of the field, giving late developments and most approved practices.

The paint symposium of the American Society for Testing Material in March presented the most recent developments in the paint and protective coating industry. This subject is of importance to the pulp and paper industry because of the variety of service conditions which materials are exposed.

The following references are given as being of particular interest to the pulp and paper industry. Although much of the contents of the articles may not be of immediate application, trends are indicated and the future will probably show a money value on the work reported.

* To be presented at the Annual Meeting of the Technical Association of the Pulp and Paper Industry, Waldorf-Astoria Hotel, New York, N. Y., Feb. 17 to 20, 1936.

[1] Chairman TAPPI Materials of Construction Committee, Continental Paper and Bag Corporation, York Haven, Pa.

Industrial and Engineering Chemistry:

Jan., 1935. "Metal Priming Paints," by H. A. Nelson, New Jersey Zinc Company.

This is a thorough discussion of the subject, in which eight pigments were studied and the best type of vehicle for each was suggested.

Feb., 1935. "Welded Equipment, Special Metals," by E. P. Poste, Chattanooga, Tenn.

Of importance as relating to fusion-welded pressure vessels of low carbon and alloy steels. Applications suggested are in the field of boiler drums and digesters.

Mar., 1935. "Jacketed Industrial Glass Heat Exchanger," by H. C. Bates, Corning Glass Works, Corning, N. Y.

A new treatment in assembly of glass pipe and iron jacket which makes glass available under operating conditions where the corrosion of materials may be avoided by the use of glass.

March, 1935. "Special Priming Paints for Wood," by F. L. Browne, Forest Products Laboratory, Madison, Wis.

Twenty special priming paints were subjected to practical exposure tests in five localities. The best of the special primers tested were those containing "leafing" pigments, aluminum powder, or flake graphite in long oil spar varnish.

June, 1935. "Koroseal, A New Plastic," by S. L. Brous and W. L. Semon, The B. F. Goodrich Co., Akron, O.

A synthetic product with properties varying from those of hard rubber to those of a jelled rubber cement embodying modified substantially insoluble polymers of vinyl halides. Properties and suggested uses are given, one being for sealing members on reciprocating pistons.

July, 1935. "Light Metals and Their Alloys," by W. M. Corse, Washington, D. C.

A discussion of the aluminum and magnesium alloys, with numerous suggested applications from air-craft to step ladders.

July, 1935. "Cladding of Ferrous Products—A New Electrochemical Method," by R. R. Rogers, Columbia University, N. Y.

As relating to the application of Cr.-Ni., stellite, and stainless steels, the subject is of interest to the industry as digester lining, stock lines and chests, etc. The cost of clad-products has probably retarded the application in the industry that the properties warrant.

Attention may be called to "Recent Developments in Manufacturing and Using Refractories" by L. J. Trostel of General Refractories Co., Baltimore, Md., as reported in July, 1935, issue of *Chemical and Metallurgical Engineering.*

The properties of the new refractories described are of interest to the industry since steam generation is of importance, and these super-duty refractories are reported as having excellent spalling and slag resistance.

A Universal Hydrogen Ion Indicator*

Donald T. Jackson[1] and John L. Parsons[2]

Abstract

The universal hydrogen ion indicator of Yamada, described in Japanese patent 99,664 [Chemical Abstracts, 28, 2258 (Apr. 20, 1934)], has been found to be very useful in a pulp and paper mill over a range pH 4 to pH 10 where on accuracy of 0.5 to 1 pH unit is desirable. Comparative results with buffered and unbuffered solutions over this pH range with the universal indicator, the glass electrode and the colorimetric methods of pH determination show very good agreement.

An abstract of a Japanese patent covering the preparation of "An Indicator for All Concentrations of Hydrogen Ions" appeared somewhat over a year ago in Chemical Abstracts *(1)*. We have been using this universal indicator for some time and have found it very helpful in a pulp and paper mill. This note is being published in the hope that our experience with this indicator will prove of use to workers in other mills.

The indicator is prepared by dissolving 0.005 gram of thymol blue, 0.0125 gram of methyl red, 0.050 gram of Bromthymol blue, and 0.100 gram of phenolphthalein in 100 cc. of neutral 95 per cent ethyl alcohol. The solution is neutralized with 0.05 N sodium hydroxide and diluted to 200 cc. with distilled water.

Color Indications

The color indications (as given in the patent) are as follows:

Red	4.0 pH
Orange	5.0 pH
Yellow	6.0 pH
Green	7.0 pH
Blue	8.0 pH
Indigo Blue	9.0 pH
Violet	10.0 pH

We have found, however, that the color at pH 7.0 could best be described as a light green and that at pH 8.0 as a very dark green.

The pH of a solution can readily be determined within the range of a single pH unit and frequently within 0.5 of a pH unit simply by adding 0.5 cc. of the universal indicator to 5 cc. of the sample to be tested in a small comparator tube. Frequently this is sufficiently accurate; at least, it serves to select the indicator necessary for a more accurate colorimetric determination.

The results which are tabulated below were obtained by first making up a series of buffer solutions covering most of the pH range. These solutions (whose pH were unknown to the operator) were tested with the universal indicator and the pH of the solution estimated (column III). The hydrogen ion concentration of the solution was then determined by the glass electrode (column IV) and in some cases also colorimetrically by using the appropriate indicator in the Taylor slide comparator (column V). Several unbuffered alkaline and acid solutions, as well as tap and distilled water, were also tested.

TABLE I

I	II	III	IV	V
Solution	Color with Universal Indicator	pH Estimated from Universal Indicator	pH with Glass Electrode	pH from Taylor Comparator
Buffer No. 1	Red-Orange	5.0	4.66	4.65[1]
Buffer No. 2	Yellow	6.0	5.91	5.95[2]
Buffer No. 3	Deep Green, Hint of Blue	8.0	8.11	...
Buffer No. 4	Deep Blue Indigo	9.0	8.92	...
Buffer No. 5	Violet	10.0	9.74	...
Buffer No. 6	Deep Red	4.0	3.85	4.0[3]
Tap Water	Light Green	7.5	7.78	7.70[2]
Distilled Water	Yellow	6.0	5.98	5.80[2]
Dilute Hydrochloric Acid	Orange	5.0	5.41	5.10[1]
Calcium Hydroxide Solution	Violet	10.0	9.80	...

[1] Bromcresol Green.
[2] Chlorophenol Red.
[3] Phenol Red.

Where it is desirable to obtain an indication within 0.5-1.0 unit of the pH in the bleaching process the universal indicator is very informative. The presence of hypochlorite or other bleaching agent usually decolorizes the indicator rapidly but the color remains sufficiently long to indicate the approximate pH of the solution.

Useful Places for the Indicator

One of the most useful places for the universal indicator is in quickly determining the pH range of an unknown solution, especially where it is desirable to select an indicator for a more accurate colorimetric pH determination. Additional uses for the indicator are suggested as one acquires experience with it.

Literature Cited

(1) Yamada, S. Japanese Patent 99,664 (Feb. 21, 1933). Chemical Abstacts, 28:2258 (Apr. 20, 1934).

* To be presented by title at the Annual Meeting of the Technical Association of the Pulp and Paper Industry, Waldorf-Astoria Hotel, New York, N. Y., Feb. 17 to 20, 1936.

[1] Research Laboratory, Hammermill Paper Company, Erie, Pa.
[2] Member TAPPI, Hammermill Paper Company.

IMPORTS OF PAPER AND PAPER STOCK

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING JANUARY 11, 1936

CIGARETTE PAPER

De Manduit Paper Corp., City of Hamburg, Havre, 175 cs.; Chanpagne Paper Corp., City of Hamburg, Havre, 153 cs.; Chanpagne Paper Corp., Ile de France, Havre, 893 cs.; Standard Products Corp., Ile de France, Havre, 57 cs.; M. Speigel & Son, Vulcania, Trieste, 11 cs.

WALL PAPER

J. J. Morrow, Noto Maru, Tientsin, 1 cs.; American Express Co., Noto Maru, Tientsin, 2 cs.; W. H. S. Lloyd & Co., Franconia, Liverpool, 4 cs.; W. H. S. Lloyd & Co., American Banker, London, 2 cs., 9 bls.; F. Blank, Washington, Havre, 11 cs.

NEWSPRINT

N. Y. Evening Journal, Markland, Liverpool, N. S., 304 rolls; N. Y. Tribune, Markland, Liverpool, N. S., 1470 rolls; World-Telegram, Markland, Liverpool, N. S., 597 rolls; Brooklyn Daily Eagle, Markland, Liverpool, N. S., 444 rolls; Westchester Newspapers, Standard Star, Markland, Liverpool, N. S., 47 rolls; Clinton Paper Corp., Markland, Liverpool, N. S., 1565 rolls; Perkins Goodwin & Co., Hansa, Hamburg, 335 rolls; Jay Madden Corp., Hansa, Bremen, 338 rolls; Jay Madden Corp., Washington, Hamburg, 207 rolls; Koehler & Koehler, Humberarm, Cornerbrook, 29 rolls; Bank of Montreal, Humberarm, Cornerbrook, 4227 rolls; Jay Madden Corp., Europa, Bremen, 152 rolls; Jay Madden Corp., Sagoporack, Kotka, 554 rolls.

PRINTING PAPER

E. Dietzgen & Co., Hansa, Hamburg, 2 cs.; L. A. Consmiller, Hansa, Bremen, 162 cs.; Japan Paper Co., Washington, Hamburg, 3 cs.; J. H. & G. B. Siebold, Washington, Hamburg, 15 cs.; Japan Paper Co., American Banker, London, 2 cs.

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———, Pr. Polk, Genoa, 8 bls.; Walker Goulard Plehn Co., Washington, Hamburg, 3874 rolls, 187 bls.

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Globe Shipping Co., Hansa, Bremen, 25 cs.

PHOTO PAPER

American Express Co., Hansa, Hamburg, 89 cs.; J. J. Gavin, Aquitania, Southampton, 8 cs.

COLORED PAPER

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DECALCOMANIAS

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Rohner Gehrig & Co., Europa, Bremen, 3 cs.

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———, Hansa, Bremen, 12 cs.

TISSUE PAPER

Van Oppen & Co., Pr. Polk, Genoa, 14 cs.; W. J. Byrnes, Aquitania, Southampton, 2 cs.

MATS

F. C. Strype, Hansa, Hamburg, 10 cs.

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DESIGN PAPER

Chester Lace Mills, Antonia, Liverpool, 1 cs.

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American Express Co., Washington, Hamburg, 50 cs.

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———, Hansa, Hamburg, 111 cs.

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MISCELLANEOUS PAPER

———, Noto Maru, Kobe, 9 cs.; Japan Paper Co., Noto Maru, Kobe, 20 cs.; Standard Products Corp., Noto Maru, Yokohama, 10 cs.; U. S. Envelope Co., Noto Maru, Yokohama, 9 cs.; International F'd'g Co., Hansa, Hamburg, 6 cs.; Keller Dorian Paper Co., Excambion, Marseilles, 8 cs.; Coty Processing Co., Ile de France, Havre, 5 cs.; E. Fougera & Co., Ile de France, Havre, 72 cs.

RAGS, BAGGINGS, ETC.

Royal Manfg. Co., Ryoyo Maru, Kobe, 200 bls. thread waste; Boger Cotton Products Co., Ryoyo Maru, Kobe,

150 bls. cotton waste; E. A. Stone & Co., Inc., Ryoyo Maru, Kobe, 100 bls. cotton waste; Royal Manfg. Co., Ryoyo Maru, Kobe, 50 bls. cotton waste; ———, City of Flint, Dundee, 99 bls. paper stock; ———, City of Flint, Leith, 173 bls. bagging; Royal Manfg. Co., Noto Maru, Kobe, 50 bls. cotton waste; Bank of The Manhattan Co., City of Hamburg, Havre, 199 bls. bagging; Bank of The Manhattan Co., City of Hamburg, Havre, 62 bls. rags; Castle & Overton, Inc., Black Osprey, Rotterdam, 65 bls. rags; ———, Tuscania, Glasgow, 26 bls. rags; ———, Tuscania, Glasgow, 70 bls. bagging; ———, Tuscania, Glasgow, 28 bls, paper stock; ———, Tuscania, Glasgow, 52 bls. cotton waste; Chase National Bank, Hansa, Hamburg, 96 bls. jute waste; E. J. Keller Co., Inc., Hansa, ———, 64 bls. bagging ———, Antonia, Liverpool, 188 bls. rags; Irving Trust Co., Siboney, Havana, 50 bls. rags; E. J. Keller Co., Inc., Excambion, ———, 145 bls. bagging; E. J. Keller Co., Inc., Excambion, ———, 115 bls. paper stock; Royal Manfg. Co., Schodack, Dunkirk, 42 bls. cotton waste; Loumar Textile By Products Co., Schodack, Dunkirk, 50 bls. bagging; E. Butterworth & Co., Inc., Schodack, Dunkirk, 101 bls. jute waste; E. J. Keller Co., Inc., Schodack, ———, 70 bls. rags; S. Shapiro & Son, Sagoporack, Gdynia, 73 bls. rags; Chase National Bank, Sagoporack, Gdynia, 72 bls, bagging.

HIDE GLUE, HIDE CUTTINGS

———, Hansa, Bremen, 200 bags hide glue; ———, Antonia, Liverpool, 539 bags hide cuttings.

OLD ROPE

Chase National Bank, Montreal City, Bristol, 72 coils; Manufacturers Trust Co., City of Hamburg, Havre, 80 rolls; ———, Hansa, Hamburg, 109 coils.

CASEIN

———, Black Osprey, Rotterdam, 500 bags, 25,022 kilos; ———, Eastern Prince, Buenos Aires, 917 bags; ———, Schodack, Havre, 334 bags, 25,050 kilos; ———, Schodack, Dunkirk, 267 bags, 20,067 kilos; ———, Ile de France, Havre, 1,800 bags.

CHINA CLAY

English China Clays Sales Corp., Antonia, Liverpool, 504 bags, 20 casks.

WOOD PULP

N. Y. Trust Co., Hansa, Hamburg, 324 bls. wood pulp, 50 tons; ———, Washington, Hamburg, 110 bls. wood pulp, 11 tons; M. Sone, Washington, Hamburg, 1000 bls. wood pulp, 154 tons; Price & Pierce, Ltd., Magna, Orviken, 1950 bls. chemical pulp, 325 tons; Price & Pierce, Ltd., Magna, Hernosand, 11,400 bls. sulphate, 1930 tons; Price & Pierce, Ltd., Magna, Hernosand, 450 bls. sulphate, 75 tons; Tradesmans National Bank, Magna, Norrsundet, 1750 bls. sulphate; Lagerloef Trading Co., Sagoporack, Helsingfors, 1352 bls. sulphite, 229 tons; Castle & Overton, Inc., Sagoporack, Wiborg, 2556 bls., wood pulp, 511 tons; E. J. Keller Co., Inc., Sagoporack, ———, 669 bls. wood pulp, 100 tons; Perkins Goodwin & Co., Sagoporack, Gdynia, 165 bls. wood pulp, 25 tons.

WOOD PULP BOARDS

———, Hansa, Hamburg, 119 bls.

PORTLAND IMPORTS

WEEK ENDING JANUARY 11, 1936

Bulkley Dunton & Co., City of Flint, ———, 3200 bls. wood pulp.

BOSTON IMPORTS

WEEK ENDING JANUARY 11, 1936

Parsons & Whittemore, Inc., Ingram, ———, 500 bls. wood pulp; Parsons & Whittemore, Inc., Taurus, ———, 600 bls. wood pulp; E. J. Keller Co., Inc., Excambion, ———, 176 bls. paper stock.

PHILADELPHIA IMPORTS

WEEK ENDING JANUARY 11, 1936

———, Montreal City, Bristol, 65 coils old rope; Keer Maurer Co., Montreal City, Bristol, 51 tons china clay; Paper Makers Importing Co., Montreal City, Fowey, 885 tons, 1 cwt. china clay; Paper Makers Importing Co., Montreal City, Fowey, 60 bags china clay; J. W. Higman Co., Inc., Montreal City, Fowey, 51 tons, 16 cwt. china clay; J. W. Higman Co., Inc., Montreal City, Fowey, 20 bags china clay; J. W. Higman Co. Inc., Montreal City, Fowey, 114 casks china clay; J. M. Hagy Waste Works, Ryoyo Maru, Kobe, 35 bls. rags; National Wiping Cloth Co., Ryoyo Maru, Kobe, 25 bls. rags; Royal Manfg. Co., Ryoyo Maru, Kobe, 40 bls. cotton waste; ———, City of Flint, Dundee, 32 bls. rags; F. Weber & Co., City of Flint, London, 3 cs. drawing paper; Gilman Paper Co., Markland Liverpool, N. S., 1474 rolls newsprint; W. Jones Co., Black Osprey, Rotterdom, 78 rolls paper; ———, Excambion, Alexandria, 69 bls. rags; American British Chemical Supplies, Schodack, Havre, 334 bags casein, 25,020 kilos; E. J. Keller Co., Inc., Schodack, ———, 215 bls. rags; Castle & Overton, Inc., Schodack, Havre, 276 bls. rags; American Sanitary Rag Co., Schodack, Havre, 47 bls. rags; Darmstadt Scott & Courtney, Schodack, Dunkirk, 5 bls. jute waste; D. M. Hicks, Inc., Schodack, Dunkirk, 19 bls. thread waste; Gottesman & Co., Inc., Malmen, Finland, 800 bls. wood pulp; Gottesman & Co., Inc., Normandiet, Sweden, 2250 bls. wood pulp; Parsons & Whittemore, Inc., Taurus, ———, 600 bls. wood pulp; Lagerloef Trading Co., Sagoporack, Kotka, 2054 bls. wood pulp boards; J. W. Hampton Jr. Co., Sagoporack, Kotka, 697 rolls newsprint; Johaneson Wales & Sparre, Inc., Sagoporack, Gdynia, 672 bls. wood pulp, 101 tons; Gottesman & Co., Inc., Sagoporack, Gdynia, 889 bls. wood pulp, 149 tons; Paper House of Pennsylvania, Sagoporack, Copenhagen, 12 cs. paper.

BALTIMORE IMPORTS

WEEK ENDING JANUARY 11, 1936

National City Bank, City of Flint Leith, 60 bls. rags; G. A. Henshaw & Son, City of Flint Hull, 70 coils old rope; Johaneson Wales & Sparre, Inc., City of Hamburg, Hamburg, 250 bls. mechanical pulp, 50 tons; J. Andersen & Co., City of Hamburg, Hamburg, 360 bls. mechanical pulp, 60 tons; Gottesman & Co., Inc., City of Hamburg, Czecho-Slovakia, 648 bls. wood pulp; Jay Madden Corp., City of Hamburg, Bremen, 97 rolls newsprint; Congoleum Nairn Co., City of Hamburg, Havre, 193 bls. rags; De Manduit Paper Corp., City of Hamburg, Havre, 373 cs. cigarette paper; R. J. Reynolds Tobacco Co., City of Hamburg, Havre, 523 cs. cigarette paper; Gottesman & Co., Inc., Normandiet, Sweden, 1000 bls. wood pulp; Parsons & Whittemore, Inc., City of Baltimore, ———, 75 bls. wood pulp; Bulkley Dunton & Co., Korsholm, ———, 2998 bls. wood pulp.

NEWPORT NEWS IMPORTS

WEEK ENDING JANUARY 11, 1936

Parsons & Whittemore, Inc., City of Baltimore, ———, 300 bls. wood pulp.

NEW ORLEANS IMPORTS

WEEK ENDING JANUARY 11, 1936

Parsons & Whittemore, Inc., Frankfurt, ———, 882 bls. wood pulp; M. Sone, Toledo, Sundsvall, 720 bls. wood pulp.

New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, January 15, 1936.

Now that the holidays are over and the inventory period is drawing to a close the local paper market is becoming more active. Demand for the various standard grades of paper is well up to average for the season. Sales forces of the leading paper organizations are again throwing themselves into the fray with enthusiasm.

The newsprint paper market continues to show signs of improvement. It is freely predicted by some manufacturers that consumption of newsprint this year will show a gain of approximately 10 per cent over the 1935 period, due to the effects of the coming presidential election. Another favorable factor is the heavier advertising budgets planned.

Steadiness prevails in the fine paper market. Demand for book, cover, bond and ledger papers is well sustained. Prices are holding to schedule. Tissues are moving in good volume. The coarse paper market is quite active, with kraft wrapping paper and specialties in seasonal request. The paper board mills are resuming activities.

Mechanical Pulp

The ground wood pulp market is exhibiting a fairly strong undertone. Manufacturing operations are being speeded up to take care of the increased consumption expected during the following twelve months. There are no undue accumulations at the mills. Prices are holding to previously quoted levels, in most instances.

Chemical Pulp

Demand for the various grades of domestic and imported chemical pulp is fairly persistent. Kraft pulp continues particularly strong, with offerings limited and prices firm. Inquiries for 1937 delivery are fairly numerous. Bleached sulphite is also displaying strength, while other grades are steady to firm.

Old Rope and Bagging

The old rope market is moderately active. Paper mill demand for domestic and foreign old manila rope is routine. Mixed strings are attracting greater interest than of late. Old rope prices are steady. The bagging market is strong. Both scrap and gunny are holding up well, while roofing bagging is in seasonal request.

Rags

Sentiment in the domestic rag market is optimistic. New cotton rags are stronger, with offerings of some grades rather scarce. New cotton cuttings continue in excellent request, both for domestic consumption and for export account. Roofing grades are sharing the general improvement. No radical changes have transpired in the imported rag market.

Waste Paper

The higher grades of paper stock are in a better position and prices are decidedly firmer. White envelope cuttings are now quoted at 2.55 to 2.65; No. 1 hard white shavings at 2.20 to 2.30; No. 2 hard white shavings at 2.05 to 2.15 and No. 1 soft white shavings at 2.00 to 2.10. Book stock is steady. The lower grades of waste paper are unchanged.

Twine

Trading in the local twine market is gradually becoming more lively. Supplies are moving into consumption in fairly heavy volume for the time of year. There are a number of inquiries around for future delivery, some of which should materialize into good orders. Recently advanced quotations are well maintained.

American Writing Case Continued to Feb. 17

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., January 13, 1936—Federal Judge McLellan continued today until February 17 action on a petition of Robert A. B. Cook, representing the merchandise creditors' committee in connection with the American Writing Paper Company. The petition, which asked for various things, was originally presented by Mr. Cook at a hearing in September, action on which has been postponed several times. The plan for reorganization, published in the January 9th issue of THE PAPER TRADE JOURNAL, was filed January 4.

Newsprint Securities Show Strength

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., January 13, 1936—A renewed demand for newsprint issues has featured trading on the Montreal Stock Exchange and bond market during the past week, with gains of a fraction to 2 points recorded. Among the newsprint securities showing strength were those of the following companies: Abitibi, Canadian International, Consolidated Paper, Fraser, Hersey Papers, Minnesota and Ontario, Bathurst, Canada Paper, Restigouche, Brown, Dryden and Donnacona.

Certain-Teed Elects D. F. Brown

At a meeting of directors of Certain Teed Products Corporation, D. F. Brown was elected vice-president to fill one of the vacancies created at a previous meeting, it was announced yesterday. Mr. Brown was formerly assistant to the president for a period of seven years, and was originally employed by the company in 1921.

Taylor-Atkins Paper Mills Chartered

[FROM OUR REGULAR CORRESPONDENT]

WINDSOR, Conn., January 13, 1936—The Stevens Paper Mills here has taken over the Taylor-Atkins Paper Company, Burnside, Conn. A new corporation has been formed here, the Taylor-Atkins Paper Mills, Inc.

Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, January 15, 1936.

BLANC FIXE.—Steadiness prevails in the blanc fixe market. Prices are holding to previously quoted levels. The pulp is selling at $42.50 to $45 per ton, in bulk, while the powder is offered at 3½ to 3¾ cents per pound, in barrels, at works.

BLEACHING POWDER.—The bleaching powder market is moderately active. Contract shipments are going forward in fairly good volume. Prices are steady to firm. Bleaching powder is quoted at $2 to $2.25 per 100 pounds, in drums, at works.

CASEIN.—The casein market is firm. Domestic standard ground is quoted at 15, and finely ground at 15½; Argentine standard ground at 14¾ and finely ground at 15; French standard ground at 14½ and finely ground at 15 cents per pound, in bags, car-lot quantities.

CAUSTIC SODA.—Contract agreements for 1936 are being booked in good volume in the caustic soda market. Prices are steady. Solid caustic soda is quoted at $2.55 to $2.60, while the flake and ground are selling at $2.95 to $3 per 100 pounds, at works.

CHINA CLAY.—The china clay market is displaying strength. Shipments against contract are moving freely. Imported china clay is quoted at $13.50 to $21 per ton, ship side, while domestic paper-making clay is selling at $6.50 to $12 per ton, at mine.

CHLORINE.—Conditions in the chlorine market are satisfactory. The contract movement is well up to average. Prices are steady to firm. Chlorine is quoted at $2.15 to $2.55 per 100 pounds, in tanks, or multi-unit cars, at works.

ROSIN.—The rosin market is steadier. Paper-making gum rosin is now quoted at $4.45, and wood rosin at $4.40 per 280 pounds, gross weight, in barrels, at Savannah. Seventy per cent rosin size is selling at $2.57 per 100 pounds, in tank cars, at works.

SALT CAKE.—Paper-mill demand for salt cake is brisk. Prices are holding to schedule, in most instances. Salt cake is quoted at $12 to $13, chrome salt cake at $11 to $12 per ton, at works. Imported salt cake is selling at $12 to $13 per ton, ship side..

SODA ASH.—The soda ash market is exhibiting a strong undertone. Shipments against contract are moving regularly. Prices are firm. Quotations on soda ash, in car lots, at works, per 100 pounds, are as follows: in bulk, $1.05; in bags, $1.20, and in barrels, $1.50.

STARCH.—Business in the starch market is fairly active. The contract movement is normal for the season. Prices are easy. Special paper-making starch is quoted at $3.00 per 100 pounds, in bags, and at $3.27 per 100 pounds, in barrels, at works.

SULPHATE OF ALUMINA.—The position of the sulphate of alumina market is practically unchanged. Prices are holding to schedule. Commercial grades are quoted at $1.35 to $1.50, and iron-free at $1.90 to $2.05 per 100 pounds, in barrels, at works.

SULPHUR.—The sulphur market continues steady. Sulphur is quoted at $18 per long ton on orders of 1,000 tons or over on yearly contracts, and at $20 per ton on any smaller quantity over that period. On spot and near-by car loads, the quotation is $21 per ton.

TALC.—Trading in the talc market is moderately active. Prices are holding to previously quoted levels. Domestic talc is quoted at $16 to $18 per ton, at eastern mines, while imported talc is selling at $23 to $30 per ton, on dock.

Market Quotations

Paper

Rag Content Bond & Ledgers— Delivered Zone 1	Bonds	Ledgers
100% Rag Ext. No. 1	.36	.37
100% Rag	.28	.29
75% Rag	.21	.22
65% Rag	.18	.19
50% Rag	.15	.16
25% Rag	.12½	.13½

Sulphite Bond & Ledgers— Delivered Zone 1	Bonds	Ledgers
No. 1 Sulphite	7.75	8.75
No. 2 Sulphite	6.75	7.75
No. 3 Sulphite	6.00	7.00
No. 4 Sulphite	5.50	6.50

Book, Cased—			
S. & S. C.	5.35	@	5.75
S. & S. C. Litho	5.60	@	6.00
M. F.	5.10	@	5.50
Coated and Enamel	5.90	@	6.55
Coated Litho	5.90	@	6.55
Tissues—Per Ream—			
White No. 1	.82½	@	—
White No. 1 M. G.	.77½	@	—
White No. 1½	.62½	@	—
White No. 2	.60	@	—
Anti-Tarnish M. G.	.67½	@	—
Colored	.80	@	—
Kraft	.67½	@	—
Manila	.60	@	—
Unbleached Toilet	2.60	@	3.30
Bleached Toilet	3.94	@	5.26
Paper Towels—			
Unbleached	2.10	@	3.35
Bleached	3.30	@	3.70
Manila—			
No. 1 Jute	9.00	@	9.25
No. 2 Jute	7.75	@	8.50
No. 1 Wood	4.00	@	5.25
No. 2 Wood	3.50	@	4.00
Fibre Papers—			
No. 1 Fibre	4.25	@	5.50
No. 2 Fibre	4.00	@	4.75

(Delivered New York)

News, per ton—			
Roll, contract	41.00	@	—
Sheets	46.00	@	—
Kraft—			
No. 1 Northern	4.12½	@	4.75
Standard	4.00	@	—
Southern	3.87½	@	—
Boards—per ton—			
News	37.50	@	—
Chip	37.50	@	—
Sgl. Mla. Ll. Chip	42.50	@	45.00
Jute Lined Chip	42.50	@	45.00
Kraft Liners	57.50	@	60.00
White Patent Coated	55.00	@	57.50
Binders Boards	67.00	@	75.00

Mechanical Pulp

(On Dock, Atlantic Ports)

No. 1 Imported—			
Moist	21.00	@	22.00
Dry	21.00	@	22.00
(F. o. b. Mill)			
No. 1 Domestic and Canadian	18.00	@	24.00

Chemical Pulp

(On Dock, Atlantic, Gulf and West Coast Ports)

Bleached Sulphite (Domestic and Foreign)—			
Division 1	2.60	@	2.90
Division 2	2.55	@	—*
Division 3	2.50	@	—*
Prime Qualities—			
Class 1. All Prime Easy Bleaching	2.05	@	—*
Other Than Easy Bleaching—			
Class 2. Higher than Standard	2.00	@	—*
Class 3, Standard	1.95	@	—*
Class 4. Lower than Standard	1.90	@	—*
(On Dock, Atlantic Ports)			
Kraft No. 1	1.80	@	1.85
Kraft No. 2	1.60	@	1.70
(F. o. b. Pulp Mill)			
Kraft Domestic	1.75	@	1.80
(Delivered)			
Soda Bleached	2.50	@	—

* Add 60 Cents per short ton, dock charges, for Albany; $2.00 for Lake Ports East and $3.00 for Lake Ports West of Mackinac Straits.

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—			
New White, No. 1	7.50	@	7.75
Silesias No. 1	5.00	@	5.25
New Unbleached	7.75	@	8.00
New Soft Blacks	3.75	@	4.00
Blue Overall	5.25	@	5.50
Fancy	2.50	@	2.75
Washables	1.90	@	2.15
Mixed Khaki Cuttings	3.25	@	3.50
O. D. Khaki Cuttings	4.00	@	4.25
Men's Corduroy	1.85	@	2.00
New Mixed Blacks	2.50	@	2.75

Old Rags

White, No. 1—			
Repacked	3.00	@	3.50
Miscellaneous	2.75	@	3.25
White, No. 2—			
Repacked	1.75	@	2.25
Miscellaneous	1.50	@	1.75
Thirds and Blues—			
Repacked	1.75	@	1.85
Miscellaneous	1.45	@	1.55
Roofing Rags—			
No. 1	1.55	@	1.60
No. 2	1.35	@	1.40
No. 3 (bagging)	1.00	@	1.05
No. 4	.95	@	1.00
No. 5A	.90	@	1.00

Foreign Rags

New Rags

New Dark Cuttings	2.00	@	2.25
New Mixed Cuttings	1.80	@	1.90
New Light Silesias	3.75	@	4.00
Light Flannelettes	4.00	@	4.25
New White Cuttings	6.50	@	6.75
New Light Oxfords	3.25	@	3.50
New Light Prints	2.75	@	3.00

Old Rags

No. 1 White Linens	7.50	@	8.00
No. 2 White Linens	6.50	@	7.00
No. 3 White Linens	4.50	@	5.00
No. 4 White Linens	2.25	@	2.50
No. 1 White Cotton	4.25	@	4.75
No. 2 White Cotton	3.25	@	3.75
No. 3 White Cotton	2.50	@	2.75
No. 4 White Cotton	1.90	@	2.15
Extra Light Prints	2.00	@	2.25
Ord. Light Prints	1.75	@	1.85
Med. Light Prints	1.55	@	1.65
Dutch Blue Cottons	2.00	@	2.25
French Blue Linens	2.30	@	2.40
German Blue Linens	2.15	@	2.25
German Blue Cottons	1.70	@	1.80
Checks and Blues	1.70	@	1.80
Linsey Garments	1.95	@	2.05
Dark Cottons	1.50	@	1.60
Old Shopperies	1.00	@	1.05
New Shopperies	1.25	@	1.35
French Blues	2.00	@	2.25

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—			
Foreign	2.20	@	2.25
Domestic	2.15	@	2.20
Wool Tares, light	1.75	@	2.00
Wool Tares, heavy	2.25	@	2.35
Bright Bagging	1.75	@	1.80
Manila Rope—			
Foreign	2.10	@	2.15
Domestic	2.00	@	2.10
Mixed Strings	.85	@	1.00
New Burlap Cut	2.00	@	2.25
Hessian Jute Threads—			
Foreign	2.60	@	2.75
Domestic	2.80	@	3.00

Old Waste Papers

(F. o. b. New York)

Shavings—			
White Envelope Cuttings	2.55	@	2.65
Ordinary Hard White No. 1	2.20	@	2.30
Hard White No. 2	2.05	@	2.15
Soft White No. 1	2.00	@	2.10
Flat Stock—			
Stitchless	.65	@	.75
Over issue Mag	.65	@	.75
Solid Flat Book	.55	@	.60
Crumpled No. 1	.35	@	.40
Solid Book Ledger	1.50	@	1.65
Ledger Stock	.85	@	.90
New B. B. Chips	.30	@	.35
Manilas—			
New Env. Cut	1.70	@	1.80
New Cuttings	1.35	@	1.45
Bogus Wrapper	.40	@	.50
Old Kraft Machine—			
Compressed bales	1.10	@	1.20
News—			
No. 1 White News	1.45	@	1.50
Strictly Overissue	.50	@	.55
Strictly Folded	.32½	@	.35
No. 1 Mixed Paper	.25	@	.27½

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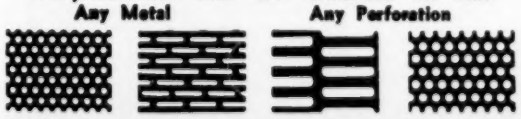

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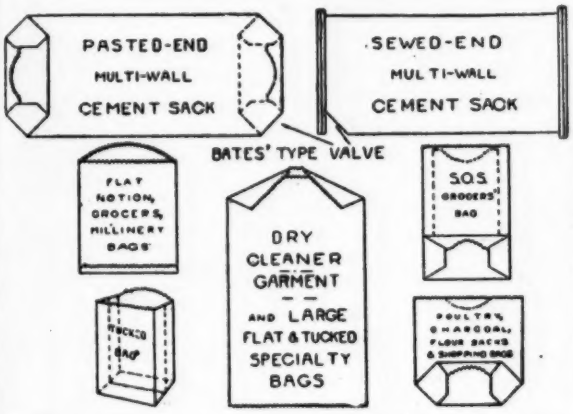
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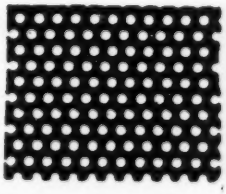

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Coarse Polished—

India	.13¼	@	.15¾
Belg. White Hemp	.14¼	@	.17¾
India Compress	.13¾	@	.14¼

Fine Polished—

Fine India	.21½	@	.23½
Special	.19½	@	.21½

Unpolished—

Box	.12	@	.12½
Paper Makers	.09	@	.13½
Tube Rope	.10	@	.15½
Wall Paper	.11	@	.14½
Wrapping	.15½	@	.21
Special	.15	@	.15½
Soft Fiber Rope	.12½	@	.12¾

(Hard Fibre)

Bond	.12	@	.20½
Anchor	.11½	@	.13
Manila	.21	@	.28

CHICAGO

Paper

(F. o. b. Mill)

Rag Bond	.12	@	.50
Water Marked Sulphite Bond	.06¾	@	.11
Sulphite Bond	.05½	@	.11
Superfine Writing	.18	@	.24
No. 1 M. F. Book	.06½	@	.07¾
No. 2 M. F. Book	.05¼	@	.06¾
No. 1 S.&S.C. Book	.06¾	@	.07¾
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07	@	.12
Coated Label	.07	@	.08½
No. 1 Manila	.04¼	@	.05¾
No. 1 Fibre	.04¾	@	.05¼
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.03¾	@	.03¾
No. 1 Kraft	4.75	@	5.00
Southern Kraft	3.88	@	4.25
No. 2 Kraft	3.88	@	4.25
Wood Tag Boards	.04¼	@	.06¼
Sulphite Screenings	.03	@	.03¾
Manila Tissue	.05¾	@	.07
White Tissue	.07	@	.09

(Delivered Central Territory)

News, per ton—			
Rolls, contract	41.00	@	—
Sheets, open	46.00	@	48.50
Boards, per ton—			
Plain Chip	46.50	@	—
Solid News	50.00	@	—
Manila Lined Chip	55.00	@	—
Patent Coated	65.00	@	—
Container Lined—			
85 Test, per 1000 sq. ft.			1.70
100 Test, per 1000 sq. ft.			1.85

Old Papers

(F. o. b. Chicago)

Shavings—			
No. 1 White Envelope Cuttings	1.70	@	2.00
No. 1 Hard White	1.40	@	1.65
No. 1 Soft White	1.25	@	1.50
Ledger & Writings	.70	@	.80
Solid Books	.60	@	.70
Blanks	1.00	@	1.05
Krafts	.80	@	.90
New Kraft Cuts	1.20	@	1.30
Manila Env. Cuts	1.25	@	1.30
Ex. No. 1 Manila	.90	@	1.00
Print Manila	.40	@	.50
Overissue News	.40	@	.45
Old Newspapers—			
No. 1	.30	@	.35
No. 1 Mixed Paper	.25	@	.30
Roofing Stocks—			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper

Rag Content Bond & Ledgers—

Delivered Zone 1	Bonds	Ledgers
100% Rag Ext. No. 1	.36	.37
100% Rag	.28	.29
75% Rag	.21	.22
65% Rag	.18	.19
50% Rag	.15	.16
25% Rag	.12½	.13½

Sulphite Bond & Ledgers—

Delivered Zone 1	Bonds	Ledgers
No. 1 Sulphite	7.75	8.75
No. 2 Sulphite	6.75	7.75
No. 3 Sulphite	6.00	7.00
No. 4 Sulphite	5.50	6.50

F.o.b. Mill

Book, M. F.	.05¼	@	.06¼
Book, S. S. & C.	.05½	@	.07½
Book, Coated	.06½	@	.09
Coated Lithograph	.06¾	@	.08½
No. 1 Jute Manila	6.25	@	—
Manila Sul., No. 1	5.25	@	—
Manila No. 2	3.75	@	—
No. 1 Kraft	5.00	@	—
Southern Kraft	4.75	@	—
News Print Rolls	40.00	@	—
Straw Board	40.00	@	45.00
News Board	40.00	@	—
Chip Board	37.50	@	—
Wood Pulp Board	70.00	@	85.00
Binder Boards—			
No. 1, per ton	75.00	@	80.00
No. 2, per ton	70.00	@	75.00
Carload lots	65.00	@	70.00
Tarred Felts—			
Regular	52.25	@	54.25
Slaters (per roll)	.84	@	.94

Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	.06½	@	.07
New White, No. 2	.04½	@	.05
Light Silesias	.04	@	.05
Silesias, No. 1	.04	@	.04½
Black Silesias, soft	.03	@	—
New Unbleached	.06½	@	—
Washable, No. 1	.02	@	.02½
Blue Overall	.05	@	.05½
Cottons—According to grades—			
Washable, No. 2	.02½	@	.04½
New Blue	.02	@	—
Fancy	.01½	@	.02
New Black Soft	.04¼	@	—
New Light Seconds	.04	@	—
New Dark Seconds	1.10	@	—
Khaki Cuttings—			
No. 1 O. D.	.04	@	—
No. 2 Mixed	.03	@	.04
Corduroy	.01¾	@	.02
New Canvas	.03½	@	.04½
New Black Mixed	.02¼	@	.02½

Domestic Rags (Old)

White No. 1—			
Repacked	3.50	@	4.00
Miscellaneous	2.50	@	3.25
Thirds and Blues—			
Miscellaneous	1.75	@	2.00
Repacked	2.50	@	2.75
Black Stockings (Export)	4.50	@	5.00
Roofing Stock—			
Foreign No. 1	1.10	@	1.20
Repacked	1.30	@	1.50

Bagging

(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.75	@	—
Domestic	2.00	@	—
Manila Rope	2.50	@	—
Sisal Rope	1.25	@	1.50
Mixed Rope	1.00	@	1.10
Scrap Burlaps—			
No. 1	2.00	@	2.25
No. 2	.80	@	.90
Wool Tares, heavy	3.00	@	3.25
Mixed Strings	1.00	@	1.10
No. 1 New Light Burlap	2.25	@	2.50
New Burlap Cuttings	2.00	@	2.25

Old Papers

(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	2.25	@	2.30
No. 2 Hard White	1.90	@	2.00
No. 1 Soft White	1.80	@	1.85
No. 2 Soft White	1.25	@	1.30
No. 1 Mixed	—	@	.75
Solid Ledger Stock	1.50	@	1.60
Writing Paper	1.00	@	1.10
No. 1 Books, heavy	.55	@	.60
No. 1 New Manila	1.50	@	—
Print Manila	.50	@	.60
Container Manila	—	@	.50
Old Kraft	1.00	@	—
No. 1 Mixed Paper	—	@	.30
Straw Board Chip	.40	@	—
Binders Board Chip	.40	@	—
Corrugated Board	.55	@	—
Overissue News	.60	@	—
Old Newspapers	.40	@	—

BOSTON

Paper

Rag Content Bond & Ledgers—

Delivered Zone 1	Bonds	Ledgers
100% Rag Ext. No. 1	.36	.37
100% Rag	.28	.29
75% Rag	.21	.22
65% Rag	.18	.19
50% Rag	.15	.16
25% Rag	.12½	.13½

Sulphite Bond & Ledgers—

Delivered Zone 1	Bonds	Ledgers
No. 1 Sulphite	7.75	8.75
No. 2 Sulphite	6.75	7.75
No. 3 Sulphite	6.00	7.00
No. 4 Sulphite	5.50	6.50

F.o.b. Mill

Book, Super	.06	@	.09
Book, M. F.	.05½	@	.08½
Book, Coated	.08½	@	.18
Coated Litho	.09	@	.12
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¾	@	.06¼
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	.04¾	@	.05
No. 2 Kraft	.04¼	@	.04¾

(F. o. b. Boston)

Southern Kraft	.03¾	@	.04¾

(F. o. b. destination in carload lots, f. o. b. mill in less than carload lots)

(Delivered New England points)

News Print Rolls	39.50	@	—
Straw Board, rolls.009	—	@	35.00
Filled News Board	40.00	@	45.00
Chip Board	37.50	@	40.00
Single Manila Lined Chip	47.50	@	52.50
Single White, Patent Coated News Board (Bender)	55.00	@	65.00
Wood Pulp Board	70.00	@	75.00
Binder Boards (Standard Grade)	67.00	@	75.00

Old Papers

(F. o. b. Boston)

Shavings—			
No. 1 Hard White	2.00	@	2.20
No. 1 Soft White	1.75	@	1.90
No. 2 Mixed	.75	@	.80
Solid Ledger Books	1.40	@	1.50
Overissue Ledger Stock	1.15	@	1.30
Mixed Ledgers	.85	@	.90
No. 1 Books, heavy	.55	@	.65
No. 1 Books, light	.50	@	.60
Crumpled Stitchless Book Stock	.50	@	.60
Manila Env. Cuttings	1.50	@	1.60
No. 1 Old Manila	.60	@	.65
White Blank News	1.30	@	1.35
No. 1 Kraft	1.05	@	1.15
Mixed Papers	.22½	@	.25
Print Manila	.50	@	.60
Container Manilas	.27½	@	—
Old Newspapers	.25	@	.27½
Overissue News	—	@	.35
Box Board Chips	—	@	.25
Corrugated Boxes	.35	@	.37½
Kraft corrugated boxes	.85	@	.90
Screening Wrappers	.40	@	.45

Bagging

(F. o. b. Boston)

Manila Rope—			
Foreign	2.00	@	2.25
Domestic	2.10	@	2.25
Transmission Rope	1.00	@	1.10
Jute Rope	1.75	@	2.00
Jute Carpet Threads	1.00	@	1.10
Gunny No. 1—			
Foreign	2.00	@	2.25
Domestic	1.80	@	2.00
Bleachery Burlap	4.00	@	4.50
Scrap Burlap—			
Foreign	2.00	@	2.15
Domestic	1.90	@	2.10
Scrap Sisal	1.85	@	1.95
Scrap Sisal for Shredding	2.00	@	2.10
Wool Tares, heavy	2.00	@	2.10
New Burlap Cuttings	2.25	@	2.35
Australian Wool Pouches	3.00	@	3.25
Heavy Baling Bagging	2.50	@	2.75
Paper Mill Bagging	1.35	@	1.50
Bagging No. 2	90	@	.95

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints	.01¾	@	.02
New White No. 1	.06¾	@	.07
New White No. 2	.04	@	.04¼
Silesias No. 1	.04½	@	—
New Black Silesias	.02½	@	.03
Soft Unbleached	.06¾	@	.07
Blue Cheviot	5.25	@	5.50
Fancy	.0225	@	.023
Washable	.0165	@	.0170
Cottons—According to grades—			
Blue Overalls	5.25	@	5.50
New Black, soft	.04	@	.04¼
Khaki Cuttings	.04	@	.04½
O. D. Khaki	.04	@	.04¼
Corduroy	.01¾	@	.02
New Canvas	—	@	.05
B.V.D. Cuttings	—	@	.06¼

Domestic Rags (Old)

(F. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	—	@	2.75
Miscellaneous	2.50	@	2.75
White No. 2—			
Repacked	1.90	@	2.00
Miscellaneous	2.00	@	2.25
Twos and Blues	1.50	@	2.00
Thirds and Blues—			
Repacked	1.37¼	@	1.75
Miscellaneous	1.25	@	1.62½
Black Stockings	2.50	@	3.00
Roofing Stock—			
No. 1	1.55	@	1.65
No. 2	1.35	@	1.45
No. 3	.95	@	1.00

Foreign Rags

(F. o. b. Boston)

Dark Cottons	1.60	@	1.70
New White Shirt Cuttings	6.50	@	6.75
Dutch Blues	2.25	@	2.50
New Checks & Blues	2.50	@	3.00
Old Fustians	1.90	@	—
Old Linsey Garments	2.10	@	—
New Silesias	4.50	@	4.75

TORONTO

Paper

(F. o. b. Mill)

Bond—			
No. 1 Sulphite	.11	@	—
No. 2 Sulphite	.08½	@	—
No. 1 Colored	.12	@	—
No. 2 Colored	.09	@	—
Ledgers (sulphite)—			
Ledgers, No. 1	.34½	@	—
Ledgers, No. 2	.25½	@	—
Writing	.09	@	.09¾
Book—			
No. 1 M. F. (Carloads)	6.50	@	—
No. 2 M. F. (Carloads)	6.00	@	—
No. 3 M. F. (Carloads)	6.00	@	—
No. 1 S. C. (Carloads)	7.00	@	—
No. 2 S. C. (Carloads)	6.50	@	—
No. 3 S. C. (Carloads)	6.50	@	—
No. 1 Coated and Litho	12.00	@	—
No. 2 Coated and Litho	10.50	@	—
No. 3 Coated and Litho	9.50	@	—
Coated tinted	13.00	@	—
Wrapping—delivered—			
Rag Brown	4.75	@	—
White Wrap	2.50	@	—
"B" Manila	2.25	@	—
No. 1 Manila	2.40	@	—
Fiber	2.40	@	—
Kraft, M. F.	2.90	@	—
Kraft, No. 2	2.40	@	—

(F. o. b. Cars Toronto)

News, per ton—			
Rolls (contract)	39.50	@	—
Sheets	44.50	@	—

Pulp

Ground wood	27.00	@	—
Unbleached Sulphite	42.00	@	—
Book (Class 1)	58.00	@	—
Writing (Class 2)	59.00	@	—
Select (Class 3)	60.00	@	—

Old Waste Paper

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	2.00	@	2.25
Soft White	1.60	@	1.90
White Blk. News	1.25	@	1.40
Book and Ledger—			
Flat Magazine and Book Stock (old)	.90	@	1.00
Light and Crumpled Book Stock	.80	@	.90
Ledgers and Writings	1.00	@	1.05
Manilas—			
New Manila Cut	1.25	@	1.40
Printed Manilas	.50	@	.60
Kraft	1.00	@	1.60
News and Scrap—			
Strictly Overissue	.55	@	—
Strictly Folded	.50	@	—
No. 1 Mixed Paper	.40	@	—

Domestic Rags

(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.06¼	@	.06½
Fancy Shirt Cuttings	.02¼	@	.02½

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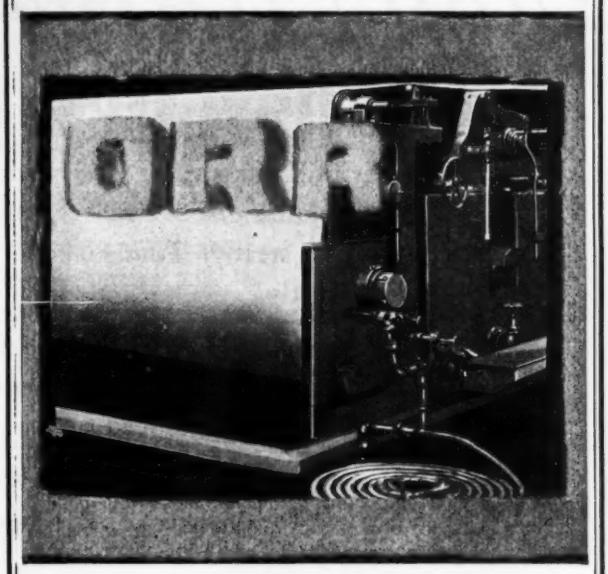
TABLE OF CONTENTS

Marathon Plant to Begin Operations	13
Canadian Paper Week Program	14
Comparative Reporting Service	14
Action Against Moyer & Pratt Dismissed	14
Whiting-Plover Completes Improvements	15
Badger Installs Six Additional Driers	15
Control Dam Rebuilding Proposed	15
Chicago Paper Industry Satisfactory	16
Drinking Cup Merger Proposed	16
Association Activities	16
Safety Council Banquet	16
Discuss Wood Pulp Investigation	16
Boston Paper Demand Active	18
Carthage Papermakers Increase Stock	18
Change Name to Cowles Classifiner	18
Philadelphia Paper Demand Expands	21
Association Activities	21
TAPPI and Superintendents Meet	22
New England TAPPI Elects R. C. Griffin	23
Paper Trade Council Expands	24
Hawthorne Co. Increases Production	24
Schedule of Meetings for Paper Week	25
National Paper Trade Convention	28
Chillicothe Paper Co. to Build	28
Superintendents Appoint Committees	28
Editorial	**30**
Reorganization Plan to be Heard	31
Production Ratio Report	31
Geo. H. Mead Appointed Chairman	31
Maine Dinner During Paper Week	31
Technical Section	
Alkali Recovery by Electrical Precipitation	33
The Rate of Digestion of Wood in Sodium Hydroxide Solutions	36
Lake States TAPPI Discusses Titanium Pigment	43
M. H. Waterbury Dead	43
Imports of Paper and Paper Stock	44
New York Market Review	**47**
Miscellaneous Markets	**48**
Market Quotations	**48**

THE PAPER TRADE JOURNAL is indexed in Industrial Arts Index

Want and For Sale Advertisements, 54-55



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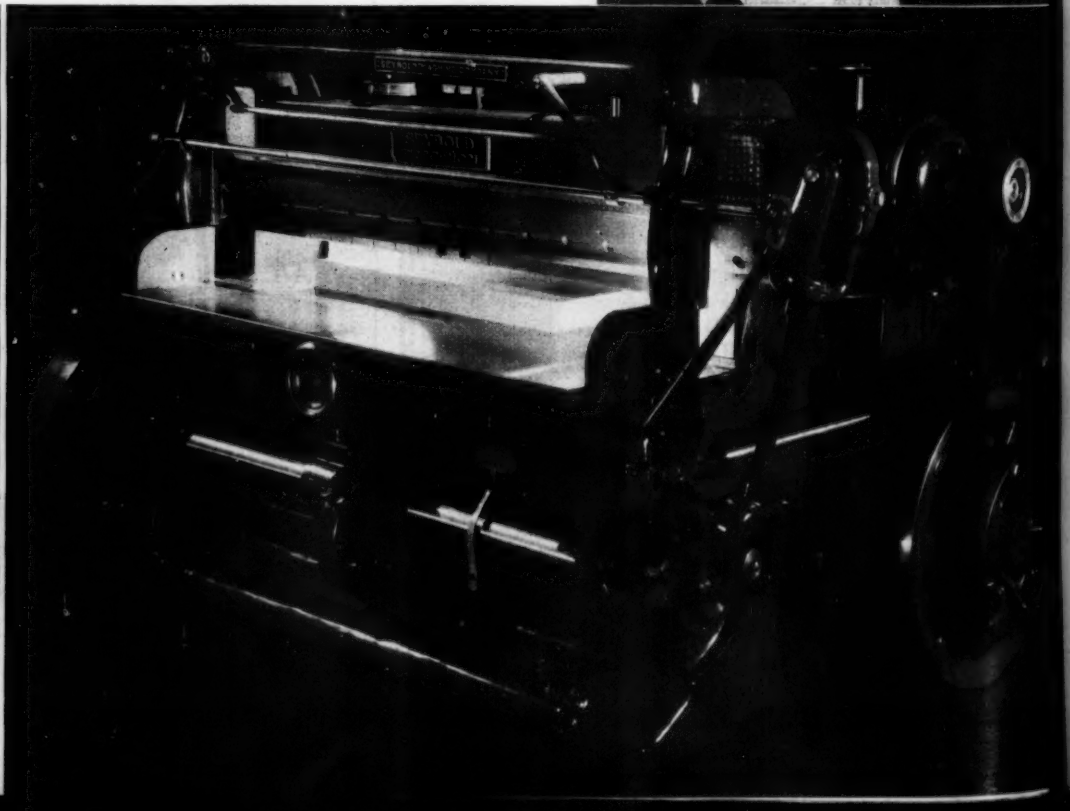
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